GRAPEGROWING · WINEMAKING · MARKETING
SEPTEMBER / OCTOBER 1993

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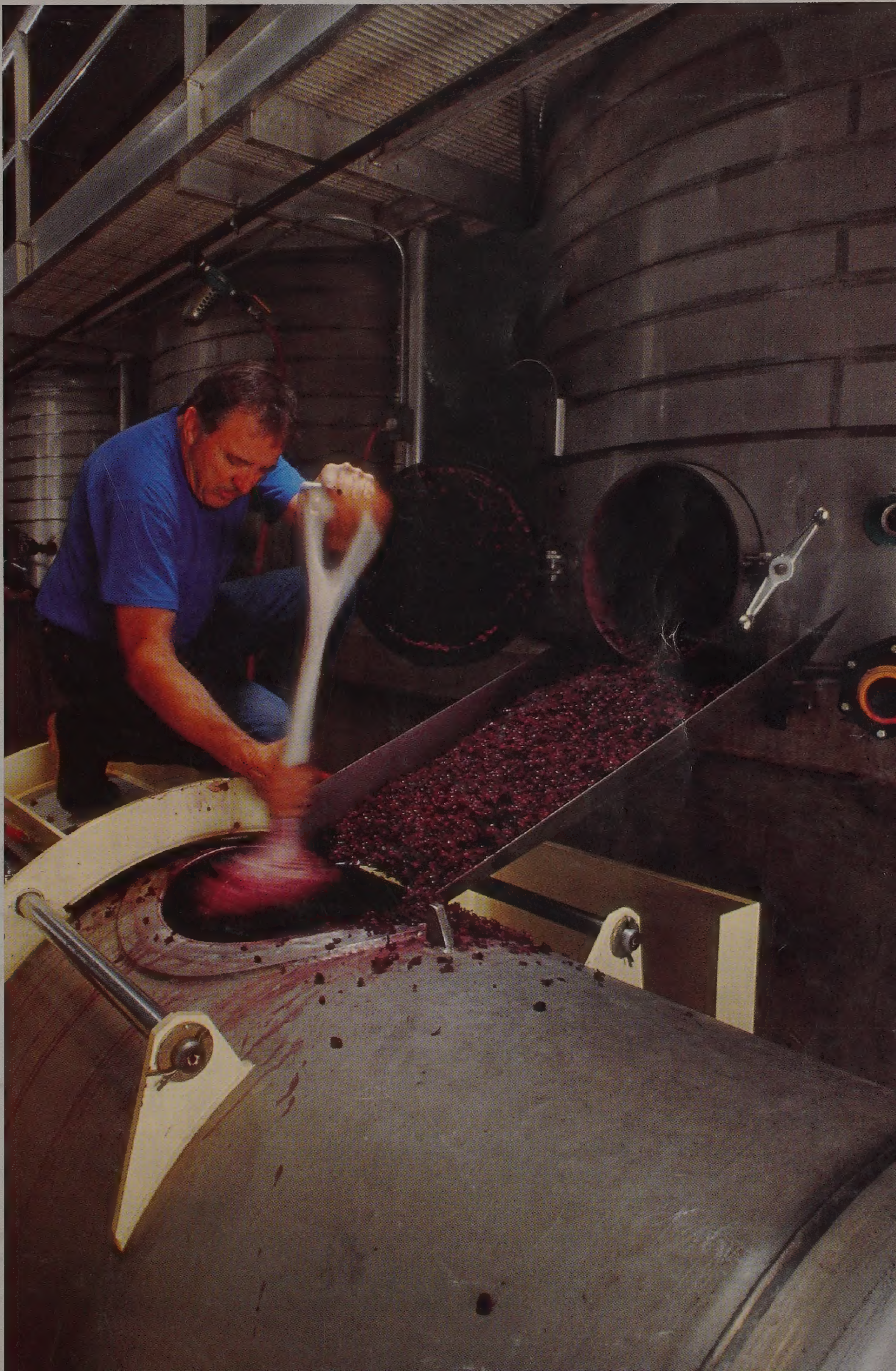

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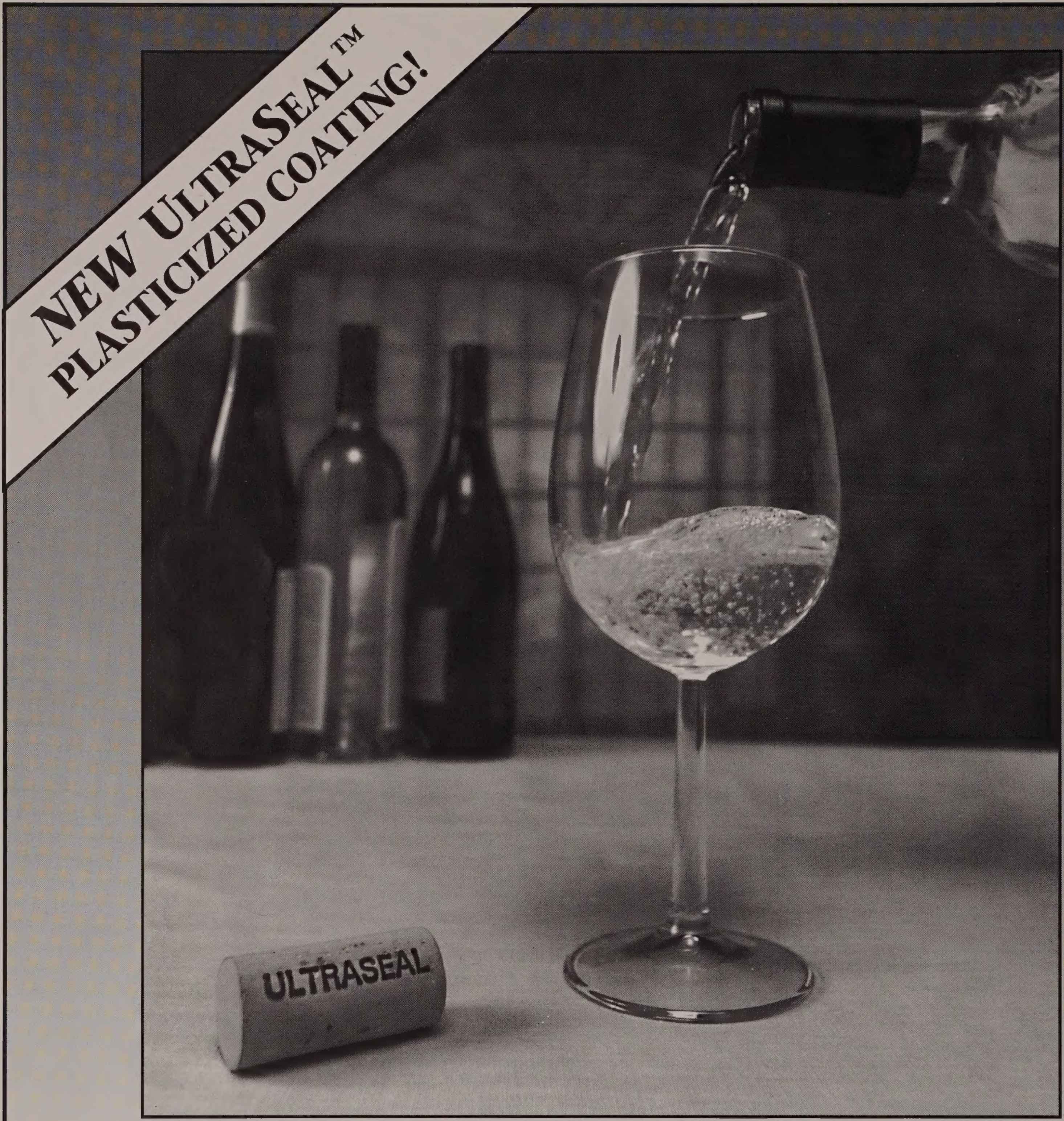

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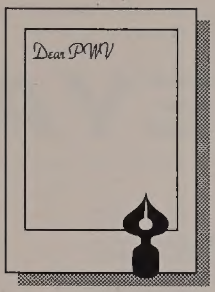
LETTERS



✍ Dear Editor:

As a long-time fan of *PWV*, and one who has said so in writing before, I must tell you how disappointed I am in your choice of material for your 'Free Run' section. I'm even more disappointed in the way it was presented.

It appears to be editorial from your magazine, when in fact it is nothing more than an un-bylined propaganda piece provided by the subject of the supposed article. I refer to "Relevance of The Century Council to Wine" in the July/August'93 *PWV*.

I'm disappointed not only because the propaganda is not identified as being what it is, but also because of your tacit endorsement of this organization. Century Council is no friend to wine.

Century Council is a distiller-front group and is funded by entities which blatantly support such anti-wine policies as the evil tax equilvalency and attempt to undermine wine in the halls of Congress.

Worst of all, it is an enemy of the U.S. Constitution. Since the addition of the very clever and smooth-talking Patricia Schneider to its staff, Century Council has downplayed the fact that its major policy for combating drunk driving is Administrative License Revocation (ALR), which empowers police officers in the field to confiscate a driver's license when a person is only suspected of driving under the influence. The driver must then not only prove innocence (instead of the state proving guilt), but must then sue, in many cases, to get that license back — even if the state drops charges.

How can this obvious violation of due process be permitted? The courts have ruled that since driving is a privilege rather than a right, that the cops and the states can do whatever they want to as regards your drivers license.

Century Council quotes the same neo-Prohibitionist organizations that are trying to put us all out-of-business as saying ALR is the single most effective tool to fight drunk driving. Why then, did the state of California's statistics not improve any more than the national average, when it had instituted both ALR and the other darling tool of the anti-alcohol zealots, 0.08 permissible blood alcohol, in the same year?

ALR does not effectively combat drunk driving, because this serious, repeat drunk driver doesn't give a damn whether they have a drivers license or not.

Meantime, Century Council has sold your Constitutional rights down the drain while trying to make themselves look like they're doing something to combat drunk driving.

Oh! Why is Century Council devoting so much energy to signing up wineries (while the distillers still pay all the bills)? Because wine gives them legitimacy. Wine is social. Wine is most often mentioned as being healthful and life-extending. Spirits is booze.

To all those wineries taking the CC bait, ask yourself why you're being offered something for nothing?

And *Practical Winery & Vineyard*, please think twice before devoting so much space to such an organization, especially when you don't make clear that it's propaganda we're reading.

Jerry D. Mead
Publisher & Editor, The Wine Trader

✍ Dear Editor:

It is disappointing that Jerry Mead has made disparaging and misleading remarks about The Century Council.

As immediate past director of the California Office of Traffic Safety, I have been so impressed by the Council's programs and by the sincere commitment of the many concerned wine, beer, and spirits companies that are members, that I have elected to join their efforts.

As someone involved in the traffic safety community for over 20 years, I can assure your readers that Mr. Mead's concerns about ALR are unfounded. The entire traffic safety community knows that ALR is the single most effective action government can take to combat drunk driving.

Accepted research on ALR's effect in many states has shown an average 6% to 9% reduction in alcohol-related fatalities. Some states have reported even higher reductions. As for his challenge regarding California's statistics, we experienced a 12% reduction in alcohol-related fatalities in 1990, the first year of ALR, and a 14% reduction in 1991. These reductions have continued through 1992 and into 1993.

As to the assertion that California is not better than the national average, the most telling statistics may be that California in 1993 has more than met the Clinton Administration's national goal for 1996 that no more than 43% of all motor vehicle fatalities involve alcohol. California's rate of alcohol-involved fatalities is now at 42.1% and the state's goal is to lower it even further to no more than 40% by 1996. Both are still too high, I might add, but at least represent a significant change.

Simply put, ALR saves lives. Moreover, ALR is constitutionally sound. A speedy administrative hearing assures due process, a fact that has been consistently upheld by state courts and even the U.S. Supreme Court.

Over 600 producers of wine, beer, and spirits have joined the Council to promote the responsible use of their products by making the irresponsible use of alcohol socially unacceptable. I think every American should be part of this battle, and I applaud those wineries and grape growers who have stepped forward and are doing their part.

As to 'tax equilvalency,' I am aware that the Council's chairman, John Gavin, and the Council's Board, which includes three wine directors, have stated unequivocally that the Council is not and never will be involved in this issue. There is absolutely no evidence to the contrary.

Sincerely,
Peter K. O'Rourke, Senior Vice President, The Century Council

✍ Jerry Mead:

Thank you for your letter to the Editor regarding the Century Council editorial in the July/August'93-*PWV*. We published the information on the Century Council, not as a propaganda piece, but to give wine industry members information so they could form their own opinions about the Council's programs.

We posed relevant questions and received responses in writing, which were edited with a focus on issues that would be most appropriate to the wine industry, including the equivalency tax and information about industry folks who are participating or support the Council.

Patricia Schneider, Vice President of the Century Council, made no secret of the CC's ALR policy — don't many in the wine industry also support it? She noted that the CC has adopted a non-involvement policy on equivalency tax — individual members still may support it, just as individual wineries may diametrically oppose it. So what?

Despite our differences, isn't it smart for all alcohol-producers to work together in those arenas where we have common interests? Drunken driving and sales to minors are areas where, clearly, we should all stand up and jeer.

Your appeal to the Constitution sounds like the NRA's. NRA members don't appear to care about my constitutional rights when someone's shooting me. Do you care about my rights when I'm being run down by a drunken driver? Driving is not a right, and some folks shouldn't have the privilege. Something has to be done, and if the ALR isn't the answer, then we should be working to put a better solution in place.

The wine industry should be on the front lines, fighting serious alcohol abuse and helping differentiate use from abuse. Not to fight it appears to condone drunken driving and drinking by minors. To hang back and cry Prohibitionist is to be putting the wine industry's head in the noose.

The wine industry must do more than simply mouth dismay at serious alcohol abuse and deny that wine is involved, and then attack everyone who is trying to do something about alcohol abuse as a neo-Prohibitionist. We must demonstrate a responsible attitude toward consumption.

Don Neel, Publisher-PWV

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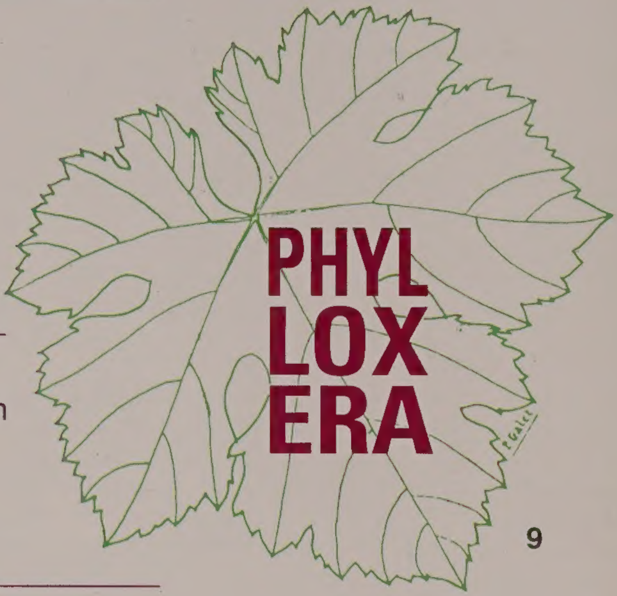

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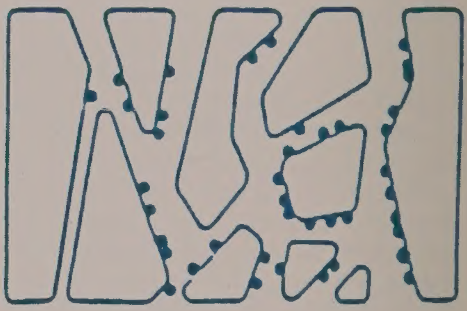
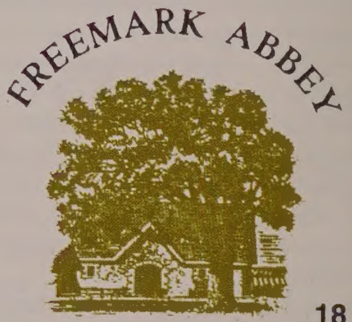


Should you filter red wine? **25**



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DE LOACH

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COVER: Loading fermented grapes into the press at Karly Winery, Plymouth, CA
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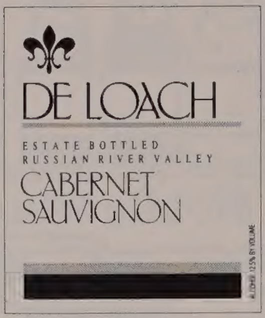
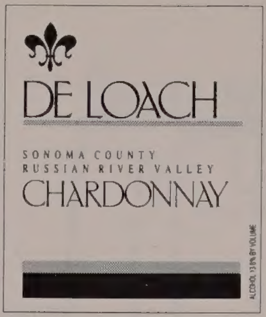
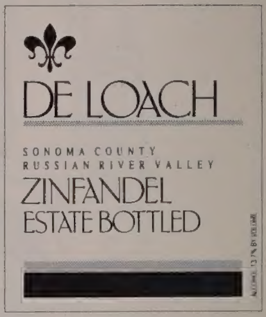






Major success with minimal financing

By Millie Howie

How does a California winery avoid falling into a financial abyss while growing from 1,000 cases/year to over 100,000 cases/year? Cecil DeLoach responds:

"From the beginning, we have approached growth with very little family capital investment, and built from the ground up without major dependence on outside financial assistance."

Still, in the 20 years since this former San Francisco, CA fireman made the decision to buy land in Sonoma County, CA, he has never let his dreams outstrip the practical expectations of success.

Born in Montgomery, AL, and descended from a long line of farmers, Cecil DeLoach always had a little dirt under his fingernails. So, as an adult Cecil knew exactly what he wanted in the way of soil and climate. With perfect timing and some good luck, he found it, along with favorable financing, in 1970.

The first purchase

The first purchase was a 24-acre vineyard on Olivet Road, seven miles northwest of Santa Rosa, CA. The ranch belonged to Louis Barbieri, whose family had planted it with Zinfandel from 1905 to 1927. The younger generation had no interest in the land, and Barbieri was adamantly against selling his property to someone who would sub-divide and build houses. Meeting with DeLoach was as fortuitous for him as it was for Cecil.

This 14,000 sq. ft., redwood building contains a tasting room, offices and cellars.

The price was set at $60,000, with $10,000 down and the balance to be repaid to Barbieri at the rate of $400/month, at 5-¾% interest. DeLoach got a three-bedroom, 1-½ bath house with a detached garage, three tractors, tillage equipment, a barn, and a flatbed truck.

Barbieri promised to stay on for a year to teach DeLoach the skills necessary to run the vineyard. To come up with the down-payment, DeLoach sold a San Francisco home for what he thought was a pretty good price, $42,000.

The 1970 crop was Barbieri's, and the Sonoma County Co-op was paying $140/ton. However, the 1970 crop was very small, since it had been hit by 13 days of frost at just the worst time. The demand for Zinfandel in 1971 soared, and DeLoach thought he had found an easy way to make money. He went to Pacific Coast Farm Credit and took out a $3,000 short-term loan to harvest the grapes.

The vineyard produced 60 tons of grapes in 1971, which DeLoach sold for $500/ton. "As a hoseman in the San Francisco Fire Dept., I was earning $1,100/month, and there I was with $30,000 in my hand. So, I took that money and made a down-payment on 28 acres on Olivet Road which would be the 'Home Ranch,' future site of the winery complex.

"Twelve of the 28 acres were in old Zinfandel, with four acres of apples, and 11 acres in pasture. The lambing shed was used for the farming equipment. The apples were pulled out to plant Gewurztraminer. The pasture land became 10 acres of Pinot Noir and an acre of Zinfandel."

The first wine

Over the next two years, DeLoach leased additional land for grapes, and started taking short courses at UC-Davis. In 1975, he made his first commercial wine, 1,000 cases of Zinfandel, in a rented, 1,200-sq.ft. metal building in a Santa Rosa industrial park.

"We had no marketing plan, recalls DeLoach. "I thought you just loaded the wine onto a truck and took it to market, so that was what I did. I drove to San Francisco, and drove around to stores, and they looked at me as if I came from outer space."

"I made the wine in open-top redwood fermenters," DeLoach recalls, "and had a few barrels. I thought I would sell the wine to the fellows at the firehouse. It was sort of a pilot program to see if I could make wine on a commercial scale. My total personal investment was $3,000, which went for some used equipment, which I rebuilt, with the help of my sons Mike and John."

To build a winery, DeLoach had to go through the complete permit process with Sonoma County and get planning commission approval, which he did. But two neighbors appealed on the grounds that a winery was a non-comforming use. "It should be residential, not a winery," said one man.

"The previous owner had prepared a sub-division map, which was approved," DeLoach said. "I just rolled it out and stated, 'Okay, I'll put in a subdivision.' That put things in perspective for them. I got a permit to build a 3,240-sq.ft. facility, but since I was low on cash, we approached it in three phases." Subsequent permits added nearly 11,000-sq.ft., for a total at the winery of 14,000-sq.ft.

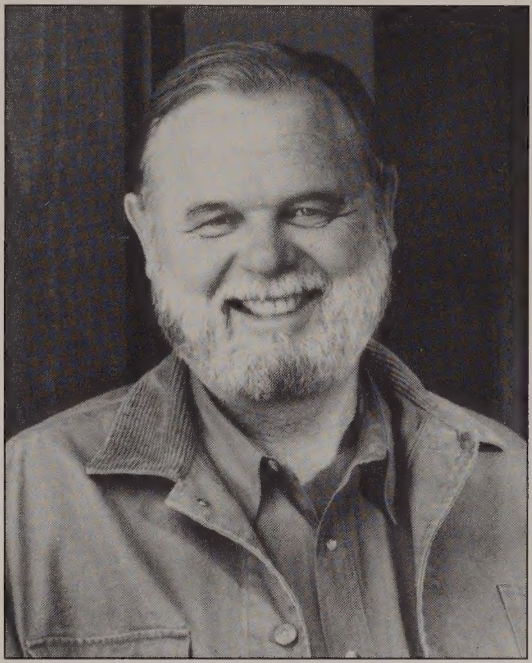
While the winery was working its way through the permit process, DeLoach made no wine, but in 1978 began preparing for the 1979 harvest. "I went to see Dee Thompson at Federal Land Bank. He had faith that I could do what I was planning, and those were simpler times. I gave him my equipment list, and my whole proposal was written on two sheets of paper.

"That year," recalls DeLoach, "we made five wines: Zinfandel, Pinot Noir, Gewurztraminer, a Pinot Noir Blush, and White Zinfandel. Total production was 4,470 cases. I knew from experience that expertise in marketing was necessary.

Serendipitously, Ivan Fuzey called to offer his services as a wine broker and national marketing agent. They drew up a one-year contract, and he brokered DeLoach wines south of San Francisco. National sales were handled by phone.

It was another year before DeLoach, who had retired as a fireman, learned how important it was to be on the road to sell wine. Production had more than doubled, and Fuzey had made reservations for a trip around the country. At the last minute, he had to cancel, so DeLoach went alone, and his wife, Christine, joined him in Kansas City, MO.

"I guess we were pretty naive," he admits. "Our approach was to go into a city, look up shops with 'wine' prominent in their name in the phone book. Then we'd get into the car and drive around and talk to people. We'd ask them who they thought was a good distributor, and when we had the same name from five or six people, we would call them and introduce ourselves. We didn't connect always with the top one, but someone always was willing to talk to us. Frequently, a bad deal was better than none, and you have to start somewhere."


Cecil De Loach

That first year, DeLoach Winery made connections in Houston, Atlanta, Jacksonville, Chicago, New York City, and Seattle. By the end of the next year, when production had reached 15,000 cases, they were in 18 states. Growth in vineyard property and production continued steadily.

Today DeLoach farms 278 acres of vineyard, all but 73 acres of it owned. Production reached nearly 115,000 cases with the 1992 vintage.

Getting smart (Phase II)

1983 was the last time DeLoach went to the Federal Land Bank, when construction was started on phase two of the winery. The loan was for $866,000 to consolidate all real estate loans into one.

"We still owe slightly over $700,000 on that loan," admits DeLoach, "but since that time, we have been able to build phases 3 and 4, which were financed entirely out of winery revenues.

"It was at about that time that I realized it would be to my advantage to shop the financial industry to get the best deal possible for vineyard purchases and financing the business plan. As a result, we now do much of our winery operations financing through Bank of America."

In 1985, DeLoach Vineyards became a corporation, and began setting long-range goals. Laura Salo was hired as a marketing coordinator. "We began building a staff of full-time marketing professionals. Now there are seven, with three living near the winery. When sales people are on the road, they make a greater impact on prospects when they can identify themselves as being from the winery.

"We also discovered that there are some places where we have to take our sales effort to another level. Florida is our largest out-of-state market. We have a representative on the road every day there. We also have one person who lives in southern California and works that area, and a representative in both the San Francisco and Texas markets.

"There is a direct correlation between the time spent in a market and the cases sold, and the object is to chart it out to know where we're going to get that 30% bump after a sales person's visit. We know the impact tails off in about two months, so we need to go back in time to give it another little bump." Both Cecil and Christine are out in the marketplace. Christine handles all the international sales, which are about 4-½% of production.

Performance demands are made on distributors of DeLoach wines. They have to carry most of the DeLoach wines, and work towards depletion goals based on production. The winery insists on accurate and detailed depletion figures, and requires product placement reports. "We've beome very familiar with the statistics of each of our markets, so we know where we'll want to give a little extra push.

"Probably 70% of our wine is sold on-premise," DeLoach says, "and we're looking for on-sale growth. We're also planning products which fit wine by-the-glass programs. In our projections, we plan 66,000 cases of Chardonnay split among products at three price levels. We bottle 25,000 cases of White Zinfandel, and will hold production there. That gives us approximately nine months of depletion.

"The reds are all increasing in sales. Single vineyard Zins are big. They sell out, and we'll keep making them, and continue to look for other niches like that. In the future, we'll probably have more varieties rather than fewer. When the 1992 wines come to market, for example, we'll introduce our first Merlot. I'm also thinking of putting in some Sangiovese or Brunello, just to have a little fun. It's okay to have fun, isn't it?"

The DeLoach Winery five-year plan, initiated July 1, 1992, calls for expansion of production to 123,000 cases in 1993 and 1994, with another 3,000-case increase in 1996. "We'll probably hold at that level," DeLoach predicts, "depending on the marketplace. This is what we think is do-able for us, and it stays within the parameters of what we have done in the past. In 1991, sales by dollars, cases, and depletions increased about 12%. In 1992, there were up 19.6%"

Aside from increasing production, DeLoach likes to have several expansion alternatives available so he can make decisions at the best possible time. One option he has considered is a production facility at an 80-acre vineyard he has been planting on Los Amigos Road near Healdsburg.

"There are a lot of variables there to consider," he notes. "I bought the land to be a vineyard, but that section could easily be annexed by the city of Windsor and zoned residential. There's no reason to build a facility if it's going to disappear into a sub-division."

Upon reflection

Looking back at the road he has traveled, DeLoach cautions those who might be thinking of following in his footsteps. "If I were starting out today," he reflects, "none of this would happen this way. Let's say I could buy the same original 24-acre vineyard. Instead of paying $60,000 at 5-¾% interest, I'd be lucky to get it at $500,000 at 10%, and I'd probably have to put $100,000 down.

"We did pretty well, because we came in at the beginning of the 'wine boom' — what *Time* Magazine called 'Purple Gold.' With the rise in grape prices, we could pay off our loan early and invest in more vineyard. That's not going to happen again. I had engineering studies made of a piece I own nearby, and the estimate, just for installing drainage, was $107,000.

"Just because what we did works for us and for our winery, doesn't mean it will work for anyone else." But, he adds with a typical DeLoach grin and shrug, "There's always room for one more in the wine industry." ■

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PART I

HISTORY OF VITICULTURAL 'ARMAGEDDON':

European phylloxera crisis

By Lucie T. Morton

Introduction: Lively and unrestricted trade of plant material in the 19th century spread countless diseases and insects, including the grape phylloxera root aphid, beyond their native habitats. Stowing away on native American grapevines, popular in the eastern and midwestern United States, phylloxera travelled eastward to Europe and westward to California and catastrophically devastated the flourishing *vinifera* grape and wine industries in both.

Today, California, home to approximately 90% of U.S. vineyards, is once again under attack from phylloxera. Thousands of acres of fine wine grapes in Oregon and Washington state also are in peril. It will cost hundreds of millions of dollars to overcome damage inflicted by this tiny insect.

The story of phylloxera's impact on the wine industry is both old news and new-news. Compared with their counterparts 100 years ago, grape growers in the 1990s are more mechanized, can buy virus-free plant material, and have greater access to irrigation. Yet problems of the past still plague growers today. In the field of rootstocks, there has been little progress, especially in the U.S. where past lessons are being re-learned at great expense.

Here we examine what happened when an insect that had lived anonymously for millions of years in America's primal forests invaded centuries-old European vineyards whose fruit had become an integral part of western civilization.

European grapevines travel to U.S.

From the beginning of the colonial period, European immigrants tried to establish a wine industry in the New World. Cuttings from the European species *V. vinifera* came across the ocean with settlers from Great Britain, France, Germany, Italy, Portual, Spain, Switzerland, and elsewhere. This new genetic material joined with native American vines mostly via wind-borne pollen, but also through deliberate hybridization by breeders in search of improved varieties.

Excerpts from:
Roots for Fine Wine — Grape Rootstocks

Quite a few American grape varieties, such as Othello and Delaware, that became popular in the 19th century, are said to owe some of their fruit quality to *vinifera* in their family trees.

Both George Washington and Thomas Jefferson experienced difficulty growing imported European varieties that seemed suited to conditions in Virginia. These distinguished viticulturists, unaware of phylloxera, did not know why the European varieties became weak and sickly. Not surprisingly, both men became increasingly enthusiastic about cultivating hardy native varieties instead of European ones.

American vines travel to Europe

The trade in vine cuttings was not a one-way affair. Beginning in the late 1700s, vines from the U.S. found their way into the collections of European botanists and amateurs.

By 1817, the nursery of the Luxemburg Gardens in Paris had 23 varieties of American vines. In 1831, a nursery in Bouches-du-Rhone advertised a selection of approximately 20 American vines. In 1840, Leo Laliman, an amateur collector from Bordeaux, began collecting American vines from sources in Georgia and Pennsylvania. He had a nursery and sold vines locally and to other places in France.

Scourge of powdery mildew

Powdery mildew (oidium) was first described in the U.S. in 1834. Not long after, in 1845, it was discovered by a gardener named Tucker in an English table-grape greenhouse. Two years later it was found in greenhouses outside Paris.

It is generally assumed that powdery mildew spores crossed the ocean in dormant buds of American grapevine cuttings. By 1851, it had spread through Europe causing panic among growers, some of whom tore out their vines in despair. The fact that American grapevines were more resistant to oidium than *vinifera* vines did not go unnoticed.

In 1859, American-vine enthusiast Leo Laliman of Bordeaux suggested grafting *vinifera* on American vines as a way to fight powdery mildew. As a purveyor of American vines in Bordeaux, he had a personal stake in people trying this remedy.

Before 1858, trade in American vines was in the form of cuttings and seeds, but after that time, rooted plants were also sold (Pouget 1989). Unbeknownst to Laliman or anyone, stowed away on boatloads of oidium-resistant American grapevines bound for Europe, were various stages (including golden eggs) of the phylloxera root aphid.

Vine death from a mysterious cause

Starting in 1863, vines began dying in the department of Gard. Initially, people thought it was due to oak root fungus, winter injury, or other causes. These were ruled out by the alarmingly rapid rate of spread, which by 1868, included sites in Vaucluse, Bouches-du-Rhone, and on the right bank of the Garonne in Bordeaux.

July 15, 1868:
Discovery of phylloxera

At Chateau Lagoy (Bouches-du-Rhone), the vineyard manager told the commission that this mysterious disease was 'marching like an army' through the vineyard. At first, investigators saw nothing except rotted roots on dead and dying vines. Then, in what Planchon describes as a "lucky strike of the shovel," he saw suspicious yellow dots and lines on some roots. Viewed through a magnifying lens, he could clearly see the multitude of aphids responsible for sucking the life out of once thriving vines. At first, Planchon called his discovery *Rhizaphis* (Greek for root aphid) *vastatrix.*

However, for reasons that appear to have more to do with academic politics then logic, the official name at that time became *Phylloxera vastatrix* Planchon (Pouget 1989). The current proper name, *Daktulosphaira vitifoliae* (U.S.) or *Dactylosphaera vitifolii* (European), is found only in the titles and introductions of scientific papers.

Phylloxera spread in France

How quickly the insect progressed from a regional problem to a national one was confirmed by the Ministry of Agriculture report on phylloxera in 1878. In only 10 years after it had first been seen on vine roots in France, phylloxera spelled doom for nearly 30% of the vines in 39 departments.

Out of a total of over 2.1 million hectares (5.8 million acres) in vineyards, the aphid had already killed 373,500 hectares and infected another 243,000 hectares (Galet 1982). The geometric rate of increase never slackened until virtually the entire country was infested. Many vineyards were never replanted.

The Ministry of Agriculture kept track of phylloxera's relentless progress through the country by department and municipality. The first hope was to find a way to solve the problem by killing the enemy so that life in the vineyards could return to 'normal.'

Chemical warfare was one way to fight phylloxera. Drowning the aphid every winter by flooding the vineyard was another way to directly attack the insect population. Neither of these methods proved to be widely applicable.

Over time, tactics shifted to living with the pest rather than eliminating it. Establishing vineyards in sandy soils and grafting on resistant roots provided effective ways to coexist with the pest.

Searching for the right roots: trial and error

The first, massive selection process for roots resistant to phylloxera took place in southern and western France during the 1870s and 1880s. For the first generation of 'rootstock pioneers' who embraced grafting European vines to American roots as a means to save their vineyards from phylloxera, finding which American species or combination of species would survive and prosper under different conditions proved to be a tedious, expensive, 30-year process.

It was found that individual varieties within the same *Vitis* species varied in properties such as imparting vine vigor, tolerance to active lime, and rooting ability. Only after painfully slow and expensive trial-and-error would rootstock varieties, hybrids between different *Vitis* species such as *riparia-rupestris* or *Berlandieri-vinifera,* be developed that would effectively meet the needs of French grape growers.

The search for the right roots was complicated by the fact that, at first, many of the American vines were being tested for fruit quality and fungus disease resistance as well as for phylloxera resistance. Thus, they were not evaluated for their unique properties as rootstocks alone such as drought tolerance, lime tolerance, vine vigor, vegetative cycle, and scion fruit character.

Grape breeders ardently sought new, improved, pest-resistant grape varieties to replace *vinifera.* The term for these new varieties came to be 'direct producers' because they were supposed to produce good grapes on their own phylloxera-resistant roots.

Before the concept of individual rootstock varieties had been understood, growers would use both cuttings and seeds sent from the U.S. to Europe literally by the ton. Every vine that springs from a seedling has a unique genetic identity and it would be pure luck if it happened to adapt itself to the vineyard soil in which it was planted.

Once the factor of differing phylloxera resistance among American species was brought to light, variability among rootstocks in adaptation to soil and climatic conditions came into better focus. Scientifically-controlled trials and practical grower experience showed the importance of matching rootstocks to environmental conditions.

European vines grafted to *Vitis riparia* stocks would thrive and produce excellent grapes in deep, fertile soils, but would do very poorly in weak, dry soils. *Vitis rupestris,* on the other hand, had a much better ability to support healthy vines in soils of low fertility in dry climates.

Neither *riparia* nor *rupestris* tolerated the chalky soils in which many of France's *vinifera* vineyards thrived. It became clear that no single species of *Vitis* would be suitable for replanting France. Only by crossing two or more species would there be new rootstocks with the specialized aptitudes necessary to meet the needs of different vineyards destroyed by phylloxera.

Lime chlorosis: the final hurdle

Many soils in fine French vineyards are characterized by high active lime, especially those of Cognac and Champagne. Whereas *vinifera* vines are tolerant of high levels of active lime, most American species are not.

Among the seeds and cuttings imported from America was a species that we now know as *Vitis berlandieri.* The fact that it was both phylloxera-resistant and lime-tolerant caught the attention of researchers including Planchon, Millardet, and Foex. But *berlandieri* was extremely difficult to root from cuttings.

Viala was convinced that pure *berlandieri* was the only answer to replanting high lime vineyards. He tried without success to improve methods of propagating this hard-to-root species. Ultimately, it became clear that *berlandieri* was only useful for rootstocks when crossed with another species.

Price tag of phylloxera in France

Economic ruin first came to thousands of small growers in the Midi region. Dead vines were sold by the wagon-load as cheap fire wood. Once-profitable vineyards were sown in grain crops that barely covered labor costs. Phylloxera's rate of spread grew geometrically, reaching devastating proportions.

Clay soils and shallow, dry hills were the first to suffer. It seemed that warm, dry years favored the multiplication rate and spread of the root and winged form of the insect. Under cool, moist climatic conditions, the rate of spread was slower. Therefore many growers in the northern vineyards mistakenly adopted an "it won't happen here" attitude. Those who warned of impending phylloxera problems were accused of causing panic and lowering property values.

Losses from phylloxera and downy mildew caused a shortage of grapes needed to quench France's considerable thirst for wine, as production levels fell below domestic consumption requirements. Importation from Italy and Spain was very detrimental to the balance of trade. France was bolstering the viticultural economies of countries who were competitors and was losing precious export markets to them.

Lacking the real thing (fresh grapes), raisins from Greece and Turkey were vinified and sugar wines were made by 'recycling' used grape skins. These were very inferior products that served a purpose during the worst years of the phylloxera crisis but were soon sources of abuse and fraud.

Fraudulent wines became a serious problem unfairly competing with honest wines and damaging the reputation of French wine in general. Rather then labelling wines made with American varieties and direct producers for what they were, growers used them to stretch their output of traditional *vinifera* wines.

Enologists worked on ways to detect fraudulent wines in the laboratory. The controlled appellation system that began during the 1930s was largely started as a way to protect honest winegrowers from abuses that were lingering side-effects of the phylloxera crisis.

Status of phylloxera in Europe today

It is highly unlikely that phylloxera will ever again wreak havoc in Europe. However, there is a lesson in the phylloxera-fungi disasters of the 19th century: strict vigilance against new pests and diseases must be kept at all times.

Understanding phylloxera

Phylloxera is the name of a genus of aphids that colonizes trees (including oak, hickory, and pecan) as well as grapes. The name is derived from Greek, *phyllon* meaning leaf and *xeros* meaning dry. The latest in a long list of entomologically 'correct' names for the insect is either *Daktulosphaira* or *Dactylosphaera vitifoliae* (Fitch) depending on how one interprets the finer points of entomological nomenclature. There is, however, universal acceptance of 'phylloxera' as the common term.

After millions of years of evolution, grape phylloxera has developed a complicated life cycle that allows it to survive and reproduce on either grape roots alone, on grape leaves alone, or on both leaves and roots depending on the climate and host vines.

An overview of the insect's life cycle, including its sex life, reproduction rates, and feeding habits gives us a better understanding of why grafting on resistant rootstocks is the most effective way of protecting susceptible varieties from damage. ■

*(Part II will be in the November/December'93-***PWV***.)*

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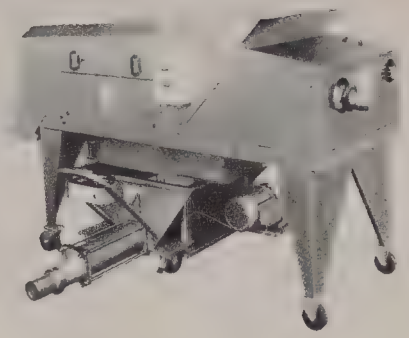

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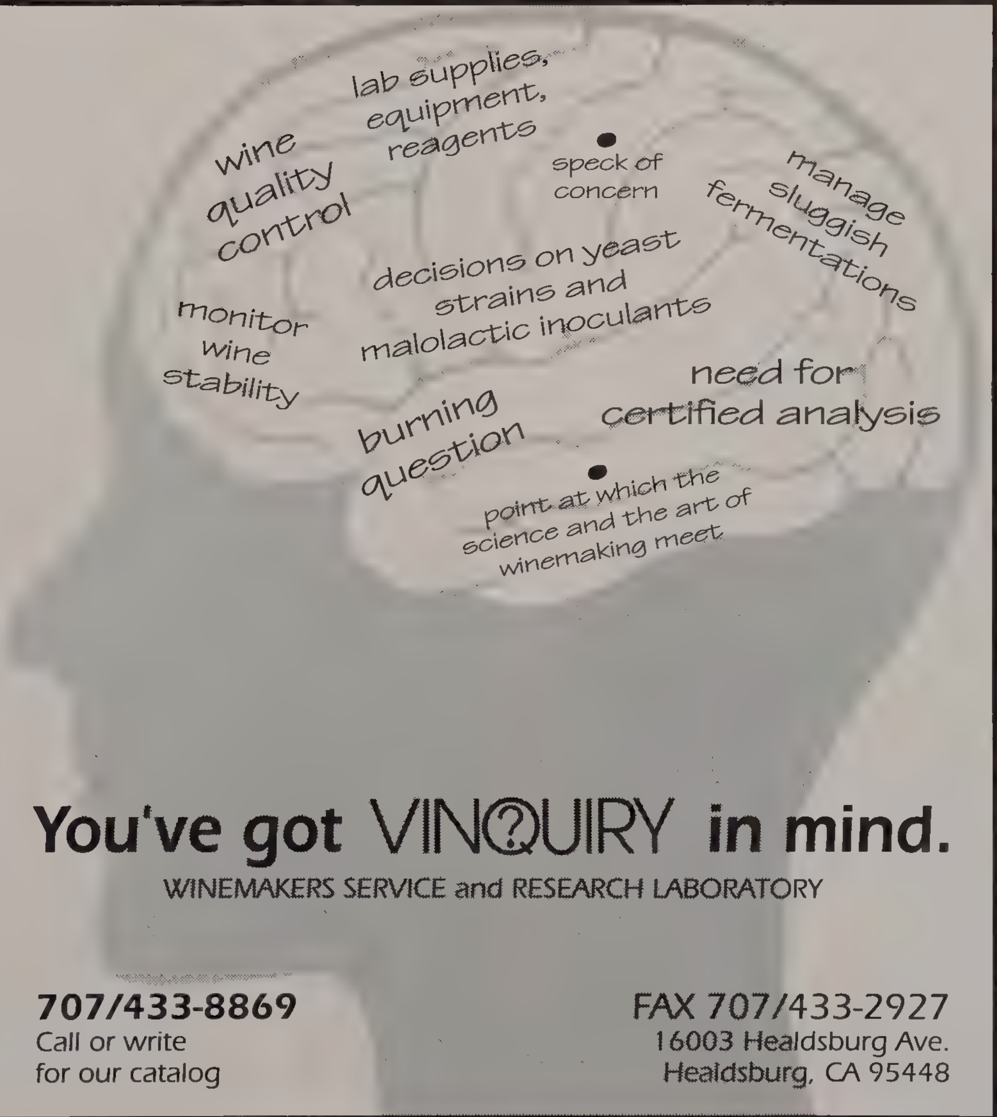
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PART I

Zinfandel — the affordable luxury

By Rhoda Stewart

"Zinfandel," says Don Reisen, marketing director for Ridge Vineyards, Cupertino, CA, "provides a sensuous taste experience, one that is laden with rich fruit at release. Zinfandel is a luscious wine one can enjoy while waiting for one's Cabernets. Zinfandel is an affordable luxury."

In these days of rising prices for, and diminishing quality of, much that we buy, premium Zinfandel wines are an anomaly. Not only is the average price of the best Zinfandel in the world still under $12/bottle, the quality of this most 'Californian' of red wines has been steadily and consistently improving over the past 12 to 15 years — both in the vineyards and the wineries.

Wine store owners report that premium Zinfandel outstrips all other premium reds. Peter Sommer and Dan Noreen, owners of The Wine Exchange of Sonoma, sell as much Zinfandel as they do other premium red varietals combined. "We push Zinfandel," says Sommer. "For the price of one of the best Zinfandels, you can get only a mediocre bottle of Cab."

"Zinfandel is our hottest-selling item," says Paul Root, part-owner of Root & Eastwood Wine Store, Healdsburg, CA. "In the past year, we've sold 40% more Zinfandel than either Cabernet Sauvignon or Pinot Noir." Root, who describes himself as a 'Zin-fanatic,' always recommends Zinfandel whenever a customer asks for a red wine for under $12. "I love Zinfandel, so I tend to sell it whenever I can. It's a wine my customers can take home for dinner and enjoy."

"A California store that prides itself on its wine shelf would be incomplete without a first-class selection of as many Zinfandels as possible," says Doug Allshouse, Wine Specialist, Safeway Stores, San Francisco. "Consumers can own the very best the state has to offer for $15 and under."

Yet, Zinfandel is the most under-rated varietal in California, according to Reisen. "For more than 100 years, vines have been grown in proven areas. Yet, because it has an obscure European pedigree, it is the prince who will never be king."

start

How are ~~growers and~~ vintners able to produce such an affordable luxury from the prince of red wines? **PWV** asked ~~growers and~~ winemakers in Sonoma, Mendocino, Napa, and Amador counties, ~~and winemakers who buy their~~ grap~~es from these counties.~~

Growers

SONOMA COUNTY
Limerick Lane Vineyard

"Location, location, location: the three most important factors in real estate are equally important in viticulture," believes Michael Collins, owner of Limerick Lane Vineyards. "Our 30 acres of Zinfandel are set on rolling benchland and hillsides in the Russian River American Viticulture Area.

"While almost any red grape varietal will yield superior fruit in our area, owing to the soil, which is clay and rock and is well-drained, Zinfandel is especially well-suited, both for the quality of fruit and the economics. Zinfandel vines, averaging 83 years in the oldest blocks, are mostly intact and consistently produce two to three tons/acre of evenly ripened well-colored fruit. I don't know of even one block of Cabernet in Sonoma County that can make such claims 83 years after planting," Collins emphasizes.

Collins employs traditional farming methods, which are well-suited to Zinfandel. "The manner in which we grow Zinfandel is not very different from the ways used for centuries in southern Europe. Consequently, our production costs are less than those for growers of other varieties such as Cabernet. We forego the costs of trellises at planting and never have the cost of maintaining them later.

"Negligible amounts of fertilizer are used, for we do not want to encourage over-production of fruit or vegetation, which would reduce grape quality. Except for two or three sulfur dustings per season, no insecticides or fungicides are used. The crop level is monitored carefully. We hedge the vines in June, and pull leaves on the vines' north sides."

To emphasize the economic viability of growing Zinfandel in Limerick Lane Vineyard, Collins makes a contrast to a tiny block of Cabernet Sauvignon that was also planted in 1980 on Limerick Lane. "While it produces fruit of outstanding quality, despite all manner of coaxing, it will not produce even two tons/acre, less than that of our oldest Zinfandel blocks.

"Probably every grape variety will grow here fairly well, but of those that have been tried, Zinfandel is surely the best bet. It can and should be grown without irrigation, since the plant is thrifty with water, and the berries are of fair size.

"Cabernet Sauvignon, conversely, has small berries, and the vine uses more water since it is more vigorous than the Zinfandel vine. Any characteristic of a variety that necessitates additional cultural steps, such as irrigation or trellising, necessarily introduces the chance for error and grape crops of less than optimum quality. As has been proven by centuries of trial and error on the European continent, what grows best in a given location grows most easily. Location is paramount, as has been proven by the Reisling in the Rhine, Syrah in the

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Rhone, and Zinfandel in California."

Limerick Lane Vineyards Zinfandel has averaged $950 to $1,200/ton over the past three years. Between 1977 (when Collins purchase the vineyard) and 1988, the fruit was purchased by various producers, including Ravenswood. Since 1988, the fruit has produced a Limerick Lane Cellars Estate Zinfandel, as well as Davis Bynum and Gary Farrell Zinfandels.

Collins provides the following 1991 and 1992 data on a seven-acre parcel: "Three acres are 13 years old; four are 60 years old. All vines are head-pruned, dry-farmed, and on St. George rootstock. Old vines produce three tons/acre, young vines, five tons/acre — for a total crop of 25 to 26 tons. The vineyard ripens evenly to about 24° Brix, 0.8 gr/ml acid, and 3.2 pH."

Total Gross Income: ($1,200/ton x 25 tons)	$30,000
Pruning:	$900
Spring Labor:	$1,400
Materials:	$400
Picking:	$1,400
Misc:	$2,500
Total Production Costs:	$6,600
Net Income:	$23,400

NAPA COUNTY

Hendry Ranch

Uniformity in the vineyard and balance between crop and canopy are, according to George Hendry, two keys to high-quality Zinfandel. Situated on the Mayacamas Mountains benchlands beside Redwood Road west of the city of Napa, Hendry's vineyards total 80 acres. Zinfandel vines cover 8.4 acres on a high knoll. The vineyard is on 'Boomer series soil,' which is an ancient river bed composed of rock and clay close enough to San Pablo Bay to be cooled by on-shore breezes.

Achieving uniform Zinfandel fruit is especially challenging. "Older vines tend more toward uniformity and balance that young vines do," finds Hendry. But Hendry has demonstrated that shoot selection, differential fertilization, and cluster thinning can produce uniform fruit, even from young vines.

Hendry's vines are spaced 8x10, cordon-trained, and grafted onto St. George rootstock. A three-wire trellis is employed. Each vine is pruned to 10 spurs, two buds/spur. Each spur produces three to four shoots. At the end of May, one or two of the weakest shoots are removed. "Uniformly strong, healthy shoots and crop to canopy balance produce uniform fruit and minimize second crop," says Hendry. Yield from the 8.4 acres is about 45 tons.

Hendry emphasizes that growing Zinfandel is a continuing education and says, "I still have a lot to learn about my vineyard."

Unlike Collins, Hendry has found that producing Zinfandel is expensive. "It would cost $15,000 to $20,000/acre and require five to seven years to replace this 18-year-old vineyard." Hendry's annual cost/acre is between $2,000 and $2,500, including pruning, cultivation, trunk succoring, shoot positioning, leaf pulling, mildew control, drip irrigation, harvest, rock removal, and fertilization.

Since about 1984, Hendry's investment in Zinfandel has paid off. Unable to get the price/ton he wanted in 1984, he had his crop custom-crushed, then sold the bulk wine to Kent Rosenblum, of Rosenblum Cellars in Alameda, CA. Rosenblum bottled a Hendry Vineyard Zinfandel that was well-received. Rosenblum first bought grapes from Hendry in 1987. Now Rosenblum regularly produces a Hendry Napa Valley bottling, and, should one of the lots meet Hendry's and Rosenblum's standards, a Hendry Reserve.

In 1988, Hendry proposed a joint venture with Rosenblum. Hendry would wait to be paid for the grapes until the wine was sold, if Rosenblum would share the profits from the sale of the wine. In the joint venture, the costs paid by each party are determined and the gross income from wine sales is divided in proportion to these costs. Both have been happy with this arrangement.

"Most important, it keeps the focus more on the wine and less on tons/acre," says Hendry, "and it is economically advantageous to us both. I get a substantially higher return and Kent doesn't have to carry the cost of the grapes." In 1992, Hendry started a second joint venture with Peter Franus.

Hendry credits the consumers' demand for value with the resurgence of Zinfandel. "We are targeting the $20 bottle of Cabernet with a $13.50 bottle of Zinfandel, and our wine is selling! No longer does a red wine need to be Cabernet or Pinot Noir to be taken seriously by the consumer. It does have to be a good value."

MENDOCINO COUNTY

Mariah Vineyards

"The economics of Mariah Vineyards are complex," reports owner/operator Dan Dooling who was inspired by the success, in the hands of Jed Steele (then winemaker for Kendall-Jackson), of the southwest Mendocino ridge-top Zinfandels of DuPratt/DePatie, Ciapucci, and Zeni. Dan and his wife, Vicki, established the 20-acre Mariah Vineyard atop a ridge (2,400-ft. elevation) in southwest Mendocino County in 1978. The first harvest (1983) was contracted by Jed Steele while the vineyard was still being planted. Steele purchased Dooling's successive crops to 1989.

Dooling emphasizes the winemaker's importance to a new Zinfandel grower. "A good vineyard can be ruined by the wrong winemaker. The winemaker needs to know the vineyard."

Dooling's faith in Steele, who believes that the Mendocino coastal ridges are a "classic match of grape variety with a particular climate — one that leads to the ultimate in winemaking fruit," was rewarded with a gold medal for Steele's first vintage from Mariah (under the Kendall-Jackson label). Thus, Mariah Vineyards' reputation for high quality Zinfandel was established.

After originally head-pruning and dry-farming, Dooling installed trellises and a drip-irrigation system after the 1983 harvest. Because of the acid-rich loam-type forest soil (known as Josephine and Hugo loams) and heavy rain fall (from 75 to 135 inches annually), grapes on the head-trained vines had extreme mildew potential. The 1983 crop consisted of only three tons of hand-selected clusters.

"The young head-trained vines formed little humidity traps," says Dooling. By training the vines to cordons, the canopy was spread along the wires and up to two top wires, for air and light penetration — "a wise move in this locale," he adds.

The trellises also allow for cultivation practices more compatible with natural farming practices. Since 1984, a cover crop mix of 50 lbs. cayuse oats, 25 lbs. cold-weather barley, 25 lbs. purple vetch, and 25 lbs. Austrian winter peas has been drilled into two tons/acre of compost (either a blend of cotton-gin trash, grape pomace, and steer manure, or a blend of mushroom compost and grape pomace) spread in the vineyard. The legume seeds are inoculated with Rizobia.

The cover crop (planted in August) costs $26 to $28/acre (seed costs only), controls erosion, fixes and retains atmospheric nitrogen, and creates a bio-mass that is allowed to grow 18 months. It is managed with an average of three mowings, beginning in May, with a flail mower. In the fall, the dry thatch binds the soil against fall rains while the new cover in alternate rows begins growing. The following March, the old cover is plowed under.

The cover crop helps Dooling lower costs — by reducing equipment running time and draft power/fuel ratio (mower

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vs. disc for those rows). "The hidden cost-benefits of the cover (*i.e.*, beneficial insect habitat, reduction of compaction by running machinery on a mowed cover, less dust, etc.) — which are hard to put a dollar-figure on — are where the real savings are," he says.

The drip system allows controlled delivery of nutrients. The soil is thin (a sandstone layer lies three feet underground) and deficient in zinc and magnesium, according to petiole analysis. Injection of liquid fertilizer is efficient, and the drip system is used to leach-in granular amendments hand-delivered to each vine directly beneath the drippers, such as dolomitic limestone and gypsum, which Dooling hauls in bulk himself.

"I use a combination of liquid fertilizers and sea-weed kelps, cover crop, compost, and micro-nutrients in my sulfur program. I consider this good integrated pest management along with intense visual monitoring of the vineyard. I also use beneficial insects and 'soft' (or environmentally light impact) chemicals when absolutely necessary."

Dooling's incorporation of sustainable agriculture methods harmonious with the natural conditions of Mariah Vineyards have led to cost reductions by halving tractor time for many vineyard operations. His use of bio-mass cover crops have led to a savings in fertilizer costs. These cost-reductions together with a continual improvement in price/ton for the grapes have led to improved financial return over the last five years.

One concern remains: to improve/optimize the yield of Mariah Vineyards while maintaining quality. Current yield from 20 acres of nine- to 11-year-old vines averages 2.5 to three tons/acre. Dan would like to reach three to 3.3 tons/acre. But given the climate and soil, he may not be able to do so and retain quality.

"I have to ripen the fruit evenly to 22° to 23° Brix before the fall rains come," notes Dooling. "Since bud-break and bloom are four weeks later than at lower elevations and inland locations, on an average, I have to maintain tight control of production to bring the crop to desired ripeness — and to retain the high-quality that Mariah Vineyards grapes are known for."

The vines are pruned to four or five spurs/cordon, and any weak or overcropped vines are cluster-thinned mid-June to early July (depending on the season). Up to 30% of the crop has been dropped in some years.

To protect the reputation earned by Mariah Vineyards, Dooling acquired a Mariah Vineyards trademark, which carries a responsibility for quality assurance. It gives Dooling legal leverage to deny vineyard designation or the use of the name on any wine not 100% Mariah Vineyard fruit, or do not meet premium wine standards — and to insist upon vineyard designation when the above two criteria are met.

Today, Mariah Vineyards Zinfandel is sold to Fetzer Vineyards (Hopland, CA), commands some of California's highest prices for Zinfandel, and is in the Fetzer Reserve vineyard-designated program.

There is a commercial wine being made under the 'Mariah' label. The 400-case production is a collaboration between Dooling and Jed Steele. This too, is to help with the economics of growing Zinfandel in a changing wine industry.

AMADOR COUNTY

Grandpère

Scott Harvey, part-owner and winemaker for Santino Wines, has the distinction of owning the oldest producing Zinfandel vineyard in California. The 10-acre "Grandpère Vineyard," as he named it, was planted in 1867.

Harvey has replaced some of the vines, but most of the old vines are intact and still producing over three tons/acre. Original vines and replacement vines are on their own roots. At $700/ton (1990), Harvey grosses between $19,000 and $21,000/year.

Harvey provides the following annual costs/acre on his 10-acre vineyard:

Bayleton:	$40/ac 1 application/season	$400
Hoeing:	$80/ac	$800
Pruning:	$60/ac	$600
Picking:	$170/ac	$1,700
Fertilizing:	$27/ac	$270
Total costs:	$377/ac	$3770
Income:		
3-tons/acre @$700/ton		$2,100
x 10 acres		$21,000
Operating profit: exclusive of debt service, tractors, fuel, and personal labor		$17,230

Harvey's operating profit allows him to pay debt service of $14,000 plus taxes and insurance, while he lives rent-free in the house and has use of the out-buildings. "This living space is equivalent to $12,000 or more annual income. That's about what it would cost me to rent the same living space I have on Grandpère," says Harvey.

Conclusions

Zinfandel planted in well-favored locations grows easily, and consistently produces high-quality, uniform fruit. It is thrifty with water, yet produces fair-sized, juicy berries, for a high per/acre yield.

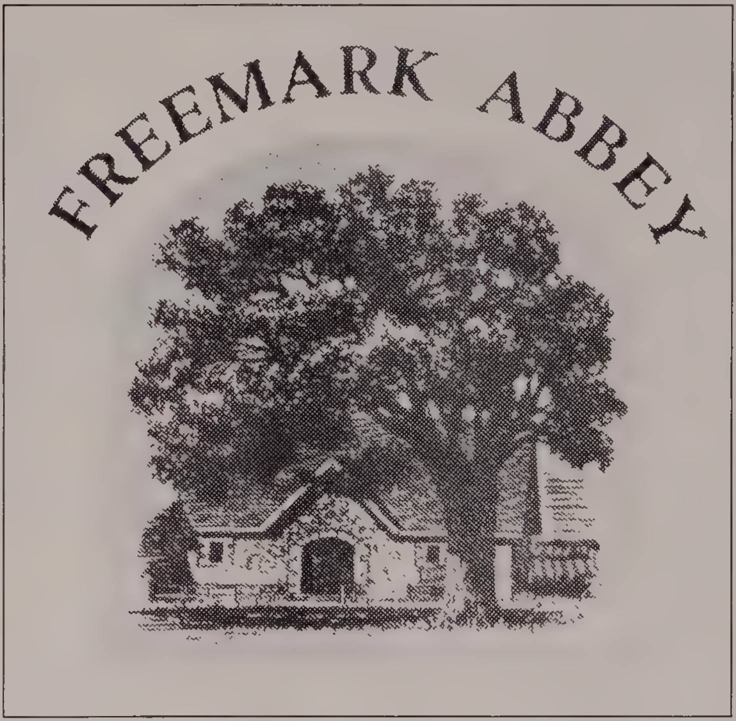
Although initial costs are high when establishing a new Zinfandel vineyard, yield on vines under 20 years in most locations runs to five tons/acre, securing substantial returns in early years, when costs are highest. As vines mature, yield decreases, but so do costs associated with maintaining quality.

Because of the longevity of Zinfandel vines, growers see their investments as long-term. Their goals, therefore, are both a fair and consistent return — one that enables them to maintain quality while supporting their life-style. Towards this end, growers are increasingly concerned with the winemakers working with their fruit.

Zinfandel wines consistently well made by winemakers who understand the vineyards win both critical and consumer recognition. This recognition, in turn, helps to secure the stable income growers need to efficiently maintain high quality. Especially important is early critical recognition for new vineyards.

Increasing demand for high-quality Zinfandel grapes has also enabled growers to establish marketing strategies that protect their investments and secure potentially higher returns. This security may also provide opportunity for expansion — which, in the long-term, will help to keep Zinfandel wine an 'affordable luxury.'

Zinfandel vines hold the promise of being one of the most affordable grape crops in the future, too, since premium Zinfandel vines established in Phylloxera-infested regions are almost to a vine planted on St. George rootstock. Growers are not facing crop loss and replanting costs of their vineyards. Vineyards established in non-phylloxera-infested regions (such as Amador, and southwest Mendocino ridge-tops) are planted on their own roots, and also are not facing damage. ■



focuses on CABERNET

Sycamore Vineyards

NAPA VALLEY

Bosché Vineyard

By Eleanor & Ray Heald

With the 1970 vintage, Freemark Abbey Winery (St. Helena, CA) introduced one of California's first vineyard-designated wines, Cabernet Bosché. Sycamore Vineyard was added in 1984. When these bottlings are viewed together with the winery's Napa Valley Cabernet Sauvignon, it's fair to say that Freemark Abbey has adopted a decidedly Cabernet focus.

In this exclusive ***PWV*** interview, Freemark Abbey's winemaker Ted Edwards details the philosophy behind the winery's Cabernet image.

How does a winery foster such a focus? Perhaps, more importantly, how does a winery showcase the differences among several Cabernet Sauvignon bottlings?

"Answers begin with the favorable soils from which we source Cabernet Sauvignon," responds Edwards. "Acknowledging that, one needs to look carefully at location. In the Rutherford sub-region, our vineyards face east by northeast taking advantage of early morning sun. Clusters are partially shaded during the day's peak heat and fruit ripens slowly and evenly. Each vineyard, however, has its own story and it's one we're attempting to make the consumer understand."

Bosché Vineyard

Cabernet Bosché (about 4,000 cases annually) originates from a 22-acre vineyard owned by the John Bosché family located on the west side of the town of Rutherford. Over the years, Cabernet Sauvignon from this site has been ranked in the company of Beaulieu Vineyard Private Reserve Cabernet Sauvignon and Inglenook Cask Cabernet Sauvignon.

Between the 1950s and 1968, grapes sourced from the Bosché Vineyard were used in the Beaulieu Vineyard Private Reserve Cabernet Sauvignon. During this period, Beaulieu Vineyard earmarked certain lots and bottled them specially for John Bosché.

In 1968, Bosché began selling fruit to Freemark Abbey partner Chuck Carpy. He blended some barrels with Merlot and bottled others as 100% Cabernet Sauvignon. A blend of about 15% Merlot established the style of Cabernet Bosché.

The Bosché Vineyard has gravelly, deep soils and is dry-farmed. It is a mix of various clones (on AXR-1 with some signs of phylloxera beginning to appear) including UCD#7 and Bella Oaks that are cane-pruned. Roughly 12% of the acreage is Merlot. Old vines are trained to the old two-wire system. New plantings are spur-pruned on a 'Y'-style trellis and the vine spacing is being reduced.

Replanting of the vineyard began in the early 1980s, with a six-acre block replanted in 1991 on 039-16 rootstock.

The wine's signature is a long, slow maturation curve that is consistent from vintage to vintage. Blackberry, cassis, green olive, and cedary components are evident in a wine with solid mid-palate and hefty, but resolved tannins.

Sycamore Vineyard

Climbing a gently steepening slope, the vineyard is located on the west side of Oakville along the 'Rutherford Bench.' Since 1976, this property, at the end of Bella Oaks Lane (about ¾ mile west of Highway 29), has been owned by Freemark Abbey partner John Bryan and his wife Flo.

The property, originally part of Martin Stelling's land holdings, was purchased by the Bryans from the Stelling Trust. The 19-acre parcel (planted between 1976 and 1978) is divided among ten acres Cabernet Sauvignon, two acres Cabernet Franc, and six acres Sauvignon Blanc. Each year, approximately 3,000 cases of Sycamore Vineyard Cabernet Sauvignon are produced.

The Sauvignon Blanc vines are on heavier soil, not well-suited to Cabernet Sauvignon or another red Bordeaux varietal, except Cabernet Franc. In 1984, some Sauvignon Blanc was budded over to Cabernet Franc and new plantings were made to give the vineyard 12% to 15% of this varietal.

In 1980, Freemark Abbey began using Sycamore Vineyard fruit in its Napa Valley Cabernet Sauvignon. From 1980 through 1983, experimental lots were made each year to determine whether the vineyard was sufficiently distinctive to carry a vineyard designation.

Sycamore Vineyard has powdery, light soil that is not very deep due to an existing hard pan at four- to five-feet. Vines are dry-farmed and cane-pruned. Shaded by western hills, this site has less light exposure than Bosché. The Bella Oaks clone was planted exclusively. Vines are trained on the old three-wire system. New vines are more tightly spaced and some vertically-trained vines are on 5C rootstock.

Early in its maturation curve, the wine is characterized by chewy tannins, but with time, dramatically impressive rich fruit evolves both in the bouquet and flavor spectrum.

Napa Valley Cabernet Sauvignon

Wine labeled Napa Valley Cabernet Sauvignon (about 9,000-case production) is a blend of several vineyards including Carpy Ranch (a Rutherford property owned by winery partner Chuck Carpy), where Cabernet Sauvignon is grown on hillside slopes; Wood Vineyard, a valley-floor site bordering the Napa River; and Red Barn Vineyard in eastern Rutherford.

"Freemark Abbey's regular Cabernet is a melting-pot," maintains Edwards. "The primary source is Carpy Ranch. Blocks not used for the Bosché and Sycamore bottlings are almost always included. Because the Napa Valley Cabernet is more heterogeneous, it incorporates these lots nicely."

When the question was raised about the best lots of Sycamore no longer entering the Napa Valley blend and potential reduction of quality, Edwards quickly pointed out concurrent events. "When the decision was made to produce Sycamore, Chuck Carpy's hillside vineyard was entering mature production," he detailed. "Effectively, the Carpy Ranch Cabernet Sauvignon replaced the Sycamore best-blocks fraction."

Harvest parameters

"Generally, we're shooting for 23° Brix for Cabernet Sauvignon in all our vineyards," Edwards reports. "TAs about 0.70 to 0.75 and pH about 3.35 are good targets. No numbers, however, will ever substitute for walking the vineyards and looking at the condition of the fruit. Visual parameters frequently indicate when a winemaker should jump into action."

Production techniques

Traditional production methods for all three wines are essentially the same. Differences are due primarily to the choice of oak barrels and the vineyard blending elements. "Vineyard sources are very significant," Edwards contends. "Bosché Vineyard fruit always showcases the soil and is strikingly different from Sycamore."

Juice is fermented in ten-ton tanks and pumped over twice daily. Wine is pressed off at 0° to -2° Brix. Experiments with maceration have been done, but they've never become part of the production technique.

Inoculation for MLF is done after pressing and MLF completes in tank. Traditionally, the winery has used ML-34, but in current practice, Edwards makes a starter culture from a mix of four ML bacteria. "One of them will find the medium hospitable," he says.

Blending components

"While I understand that there is a benefit to early blending with respect to chemical and microbial equilibrium and stability," notes Edwards, "I choose to keep most lots separate until the end of barrel ageing.

"Our vineyards are so variegated in terms of the soil composition, structure, micro-climates, and viticultural practices, that I like to be able to harvest each lot at its individual peak. Once harvested, I want to be able to vinify each lot and guide it through the ageing process, responding to the lots' individual needs. During this ageing process, we will start to simulate what the final blend will be based upon developed aromas, flavors, complexity and balance. I like to make the actual blend two to three months prior to bottling."

Typically, Cabernet Bosché is a blend of 15% Merlot. Sycamore Vineyard's first release incorporated 5% Cabernet Franc and more recent vintages have seen the proportion increase to around 8%.

"I added Cabernet Franc to the Napa Valley bottling in 1986," Edwards comments. "Cabernet Franc adds another dimension to the blend that's missed when not included. Our Cabernet Sauvignon has significant earthy components with some berry character. Our Merlot has distinctly herbaceous elements with background cherries and plums. The Cabernet Franc elevates floral and fruit elements hiding in both the Cabernet Sauvignon and Merlot.

"Cabernet Franc has also given our Napa Valley blend longer ageing potential. We have some Petit Verdot coming into production and I am anxious to experiment with it.

Among the barrel racks

Both Cabernet Bosché and Sycamore Vineyard Cabernet are aged approximately 24 months in 35% to 45% new French oak Nevers barrels. "I'll change that percentage based on how good the fruit is," Edwards maintains. "I make that judgment in November and then order

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the barrels. The wine doesn't go to barrel until mid-spring, after MLF completion."

Staring with the 1990 vintage, the Sycamore Vineyard Cabernet is being barrel-aged three years.

Napa Valley Cabernet Sauvignon is aged in an approximate 50/50 mix of Nevers and American oak.

"In 1986, we started using small amounts of fire-bent American oak as an experiment," Edwards reports. "Since then, the percentage has grown to nearly 50%, with 20% to 25% of that new oak. American oak has a lot of merit and I really like it. This winery was always 100% Nevers. While we're keeping the Bosché and Sycamore with Nevers, using American oak for the regular Cab will help us offset some of our costs and still allow us to make a signature wine."

While admitting that he is shopping around, Edwards is presently relying on several American oak coopers — A&K in Missouri, Independent Stave, and Barrel Builders.

"Once the wine goes to barrel (with bung straight-up and topped every five to six weeks), we don't rack," Edwards details. "Between pressing and the time the wine goes to barrel, we do four tank-to-tank rackings and a coarse DE filtration post-MLF. When needed, we have done aerated barrel rackings. This is however, the exception, not the norm.

"When I first came to Freemark Abbey in 1986, I followed the traditions of my predecessors. However, starting with the 1986 vintage, I have egg-white fined some of the bottlings when needed (1 to 4-lbs/1,000-gal range).

"I have learned that you need to get the wine in balance and pleasant with good structure, prior to bottling. You shouldn't rely on bottle age to reduce bitterness or excessive astringency."

Marketing images

"Freemark Abbey has been known for Cabernet Bosché for over two decades," Edwards emphasizes. "Remember, that's a long time in the history of Napa Valley wine production. Believing in its distinction, the Freemark Abbey partnership took a risk in creating Sycamore Vineyard, another vineyard-designated Cabernet Sauvignon.

"Clearly, it could be misunderstood that all it did was create a second higher-margin product. But if you look at the fact that the Sycamore Vineyard Cabernet is five years from vintage when it's released, it costs significantly more to make.

Both the Bosché and Sycamore bottles are packaged in branded wood boxes.

The Freemark Abbey partnership and winemaker Edwards have regularly blind-tasted their Bosché and Sycamore wines against other high-profile vineyard-designated Cabernets priced $30 and up. "Our wines do not always score at the top, but they're right up there," Edwards maintains. "We believe our pricing offers the consumer a superior bottle of wine for the money."

To stand on this principle, both the Cabernet Bosché and Sycamore Vineyard are priced at $25 while the Napa Valley Cabernet Sauvignon is $15. The target market is Cabernet Sauvignon drinkers. "We're not aiming at entry-level red wine drinkers," Edwards concludes. ■

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Sangiovese comes of age in Chianti Classico

By Julie Morrison

As Sangiovese gains popularity in the international market, wine growers in Tuscany's Chianti Classico region of Italy are taking a closer look at this indigenous variety. Although Sangiovese has been considered the backbone of Tuscan red wines for hundreds of years, many questions remain unanswered.

Centuries-old varietal

Sangiovese has been cultivated in Tuscany for over 600 years, according to Giacomo Tachis, respected dean of Italian winemaking and recently retired chief enologist at Marchesi L. & P. Antinori.

First planted in the Chianti Classico region, it was also planted in adjoining regions in Tuscany where it has been known under various names including Sangioveto, Sanghioveto, San Zovese, and San Zoveto. It also is widely planted today in other Italian wine regions such as Emilia-Romagna, Umbria, Latium, and the Marches.

Tachis claims that Sangiovese was blended first in the early 1300s in red table wines, collectively known as 'Vermigli,' from the Chianti district. In the 19th century, Sangiovese ranged from light, easy drinking wines to heavier tannic wines capable of withstanding transport.[1]

Throughout most of the 20th century, Sangiovese has been vinted in Chianti Classico as a light, easy-drinking wine. It has been the primary component of the chianti blend.

In the 1980s, many Tuscan producers shifted towards the production of heavier-bodied Sangiovese wines capable of cellar-ageing. Many of these wines fall in the new category entitled 'Super Tuscans' that includes wines made from Sangiovese blended with Cabernet Sauvignon.

Clonal tangle

Sangiovese clones, conservatively estimated at numbering over 200, range in wine quality from poor to sublime. They are divided into two groups: Sangiovese Grosso and Sangiovese Piccolo. Grosso also goes by the name of 'dolce,' while Piccolo also is known as 'forte.' To further complicate semantics, in Chianti Classico the term 'Sangioveto' historically has been used to refer to both classifications, though today it is used more widely to refer to Sangiovese Piccolo.

Sangiovese Piccolo is characterized by small berries and compact clusters, medium vigor, weak pigmentation, and a thin skin that is susceptible to disease. Sangiovese Grosso ripens earlier than its counterpart and has a thicker skin, deeper color, heavier tannins, greater vigor, and larger berries and clusters.

Within Tuscany, Sangiovese Piccolo is found primarily in the Chianti region, while Grosso thrives in Montalcino, where it is commonly known as Brunello. Debate rages about which clone gave rise to both Prugnolo, a selection found in Tuscany's Montepulciano, and Sangiovese di Romagna. Di Romagna is a very vigorous clone predominant in Emilia Romagna that many believe was replanted later in Chianti Classico.

Significant soil and microclimatic variation throughout Tuscany, however, blurs the commonly recognized distinctions between the two classifications of Sangiovese, making it difficult to draw generalities.

Certain Piccolo clones found in the Chianti Classico district, for example, clone R4, exhibit characteristics generally associated with Grosso, such as earlier ripening and thicker skin. Likewise, the famed Biondi Santi Brunello selection, classified as Grosso, has low vigor and smaller berries generally associated with Piccolo.

However, Paolo DeMarchi, owner/winemaker at Isole e Olena, does not believe in drawing distinctions between Grosso and Piccolo. "There is no such thing as Sangiovese Grosso and Sangiovese Piccolo. They are all adaptations of the same plant. Merlot and Cabernet Sauvignon are more similar than certain Sangiovese clones."

"The same clone on different rootstock seems like a different clone," adds Maurizio Castelli, consulting enologist for many Tuscan estates, including Badia a Coltibuono, Volpaia, Castellare, and Col d'Orcia.

Microclimatic influence

All Piccolo and Grosso clones share one element in common: extreme sensitivity to microclimatic, soil, and vintage variation.

The variability of quality and style of Chianti Classico Sangiovese mirrors the region's microclimatic diversity. In very broad terms, Sangiovese tends to increase in body and tannin, and decrease in acidity south of Florence towards Siena. The northern area around Greve tends to be somewhat cooler and more humid.

The effect of altitude is reflected in the variability of wines. Vineyards range in altitude from 250 to 600 meters. Wines from the highest peaks, such as those of Volpaia, at 600 meters, are lighter and more highly perfumed.

Chianti Classico has a mosaic of soils ranging from 0.8 to 2.0 meters deep. The most highly prized soil is *galestro*, a poor, rocky soil scattered throughout the region. When galestro is mixed with *alberese* (clay/limestone), the wines show high acidity, and are lighter and more highly perfumed. This is common in the 'Storico' zone, the historic center of Chianti Classico that encompasses Gaiole, Radda, and Castellina. When galestro is mixed with sand or clay, as is often the case in the southern area, the wines are heavier and more tannic.

Sangiovese favors "alkaline soils with a pH above 7.0" with "good drainage and some water retention," according to Maurizio Castelli. He claims that wines made from soils with "high clay have a short lifespan."

"Soils with too much humidity, clay, or accumulation of top soil don't work well for Sangiovese," DeMarchi adds.

"Alberese is the key to quality," claims Enzo Morganti, director of San Felice.

Vintage variation can be dramatic.

"From one year to the next, Sangiovese changes in its chemical and organoleptic expression," Tachis states. "These variations relate not as much to the sugar levels, which generally have minor peaks of variation, but rather to the whole question of skin extract. The total and general polyphenolic make-up is particularly variable, not only in quantity, but also in quality.[2]"

Viticultural practices

An extended growing season averaging 110 to 120 days, variable weather patterns, and a history of overcropping set the stage for difficulty in ripening the crop in Chianti Classico.

Lack of grape maturity is often a problem in Chianti Classico, while overripeness, until recently, rarely occurred. Ideally, grapes are picked between 22° and 23° Brix. If the grapes are not fully mature, the wine tends to be thin, with green and aggressive tannins.

By planting new, less vigorous, and early-ripening clones such as R4 and R24, growers hope to maximize the chances of reaching full grape maturity. The R10 clone, which was planted widely during the 1970s, is losing favor due to its high vigor, although it ripens early.

Likewise, the Kober 5BB rootstock, a late-ripening, vigorous stock that needs much water, is being replaced with old stocks such as 420A, and newer ones such as 140R, 1103, SO4, 3309, and 41B. S04, 1103, and 3309 are less vigorous, though 3309 is not very resistant to lime. When excess lime is present, 140R is used in spite of its high vigor.

Many growers crop-thin one month after flowering is completed, though the practice runs counter to centuries of tradition based on the sharecropping system. Giovanni Ricasoli, whose family has been at Cacchiano Winery for 1,000 years, claims it was difficult at first. "When we first started crop-thinning, the workers didn't want to do it. Everyone thought we were crazy. My mother had to almost take the shotgun out to get them to do it. We started in 1987 and thinned to 10 clusters/vine; now we've reduced to seven."

Marco Pallanti, winemaker at Castello di Ama, near Siena, seeks to avoid crop-thinning. "We want to arrive at a point where the yield is between 40 and 50 hectoliters/hectare (appropriate for the clone) without crop-thinning."

At Volpaia, located in the Storico district, only certain vineyards are thinned — generally those with less favorable rootstock, such as 5BB.

Paolo DeMarchi chooses not to crop-thin. "We used to cluster-thin 20% to 30%," he says. "Now we don't do it anymore. If we pull 30%, the remaining clusters become too dense and the skin too thin. I prefer to use a cover crop instead of crop-thinning.

"The water balance is very important. There should be one or two periods of stress, one after bloom, and the second after veraison, close to harvest."

As Sangiovese is especially sensitive to sunlight and ventilation, growers routinely leaf-thin after veraison. "If the grapes are not exposed to direct sunlight, they remain a red color, but if they

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are exposed to direct light they become black or purple," DeMarchi.

Trends in spacing in Chianti Classico are headed towards higher density. While the average is 3,000 vines/hectare, many new plantings have twice that density. Castelli believes that the ideal density for Sangiovese ranges from 6,000 to 8,000 vines/hectare, while the maximum yields per plant should not exceed 1-kilo, or 70 to 200 grams/cluster.

If not handled gently during production, the delicate grape skins and tendency towards bitter tannins dictate that the grapes be hand-picked and carefully destemmed.

Enological practices

Producers modernized cellars and production methods in the past decade. Stainless steel tanks, modern presses, and French oak barrels became *de rigueur*.

The traditional 'governo' method — the process of inducing refermentation by adding the must of semi-dried grapes back into the wine — largely has disappeared. Governo was used in order to soften tannins and increase alcohol and color, producing fruity wines for quick consumption. Changing consumer demand and viticultural and enological improvements, such as lower crop yields and cooler fermentation temperatures, have virtually eliminated the need for governo.

Fermentations, often with wild yeasts, routinely are temperature-controlled, generally not exceeding 30°C to 32°C. Extended maceration, ranging from two to four weeks, and inoculation for malolactic fermentation are now commonplace throughout Chianti Classico.

To counter-balance color weakness in poor vintages, enologists such as Maurizio Castelli 'bleed' off 10% to 15% of the wine at the juice stage. He also pumps over five to 10 minutes twice/day, and uses gelatin to fine only when tannins are bitter. Otherwise, egg whites are used.

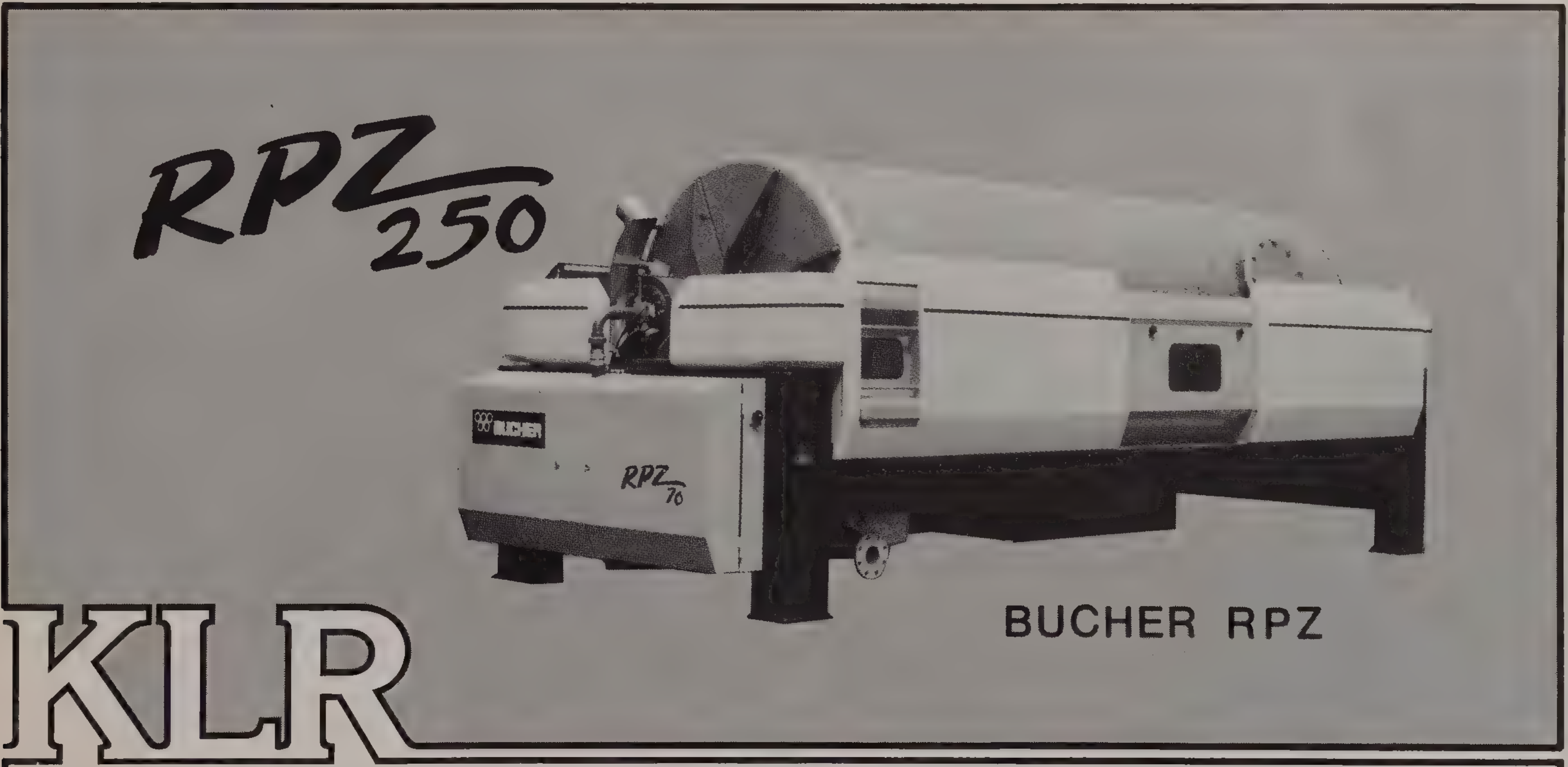
The traditional practice of leaving finished wines in chestnut casks for years on end, often until the wine was sold, has diminished in the last decade. Increasing numbers of winemakers are choosing to age their wines in 225-L or 500-L barrels, often of French oak, for shorter periods of time. Typically, there is one to 1½ years barrel-ageing and one year bottle-ageing for premium wines.

"We went from ageing in large casks for a long time to ageing in barrel for a short time," Marco Pallanti states.

Sangiovese and Cabernet Sauvignon

In the hills of Chianti Classico, nothing sparks debate as quickly as the topic of blending Cabernet Sauvignon and Sangiovese. In one camp, purists believe that blending Cabernet with Sangiovese is tantamount to treason. In the other camp are those who feel Cabernet serves to strengthen the blend and elevates the varietal's image in the international marketplace.

The debate began in the 1970s when Piero Antinori began experimenting with Cabernet and ultimately launched Tignanello, a blend of Sangiovese and Cabernet. Other producers quickly fol-



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lowed suit, siphoning off their best Sangiovese lots, formerly devoted to chianti blends, to produce limited quantities of 'Super Tuscan' wines.

The blends of these pricey wines range from 100% Sangiovese, as found in Pagliarese's Camerlengo and Isole e Olena's Cepparello, to others with small amounts of Cabernet, such as San Felice's Vigorello. Others, such as Ama's Vigna Bellavista and Castellare's I Sodi di San Niccolo, are blended with Malvasia Nera, while Volpaia's Coltasala contains Mammolo.

"After 10 years of experimenting with non-traditional varietals such as Cabernet Sauivgnon and Merlot, winemakers are returning quietly to Colorino as a blending wine," says Alessio Carli, former winemaker at Badia a Coltibuono and Viansa. "Colorino gives Sangiovese better color and body, but doesn't overpower it like Cabernet or Merlot."

Research efforts

With roughly 60% of the vineyards in the Chianti Classico region slated to be replanted in the next decade, efforts are focused now to identify the best clones for replanting. "No one knows which clone to plant," says Giovanna Morganti, enologist at Volpaia and daughter of Enzo Morganti, director of San Felice.

To sort out the clonal tangle, an ambitious research project, Chianti Classico 2000, has been launched by the Consorzio Chianti Classico with the Dept. of Agriculture, the Tuscan government, and the Universities of Florence and Pisa. Begun in 1988, the nine-year project will examine not only clonal selections, but also variables such as rootstock, spacing, trellis, pruning, and density for Sangiovese as well as other traditional varietals.

The first phase of the project, the planting of 14 experimental vineyard blocks on a total of 25 hectares, was completed in 1991 under the direction of Carlo Ferrini, formerly of the Consorzio Chianti Classico. One vineyard block is located on the property of various Consorzio winery members.

Five of the 14 experimental blocks are dedicated to examining 11 Sangiovese clones already recognized by the Dept. of Agriculture: AP1, F9A548, M42, PEC1, R4, R10, R24, 12T, 14T, 19T, and GM2. In addition, one block is dedicated to analyzing 225 'presumed' clones and another block, planted in 1992, focuses on new and unidentified clones.

Besides the Consorzio's research project, individual wineries such as San Felice also are dedicated to long-range Sangiovese research projects. Clonal experiments focus on already-approved as well as 'presumed' Sangiovese clones. Density trials focus on Sangiovese Grosso grafted onto 1103P and 420A at a density of 2,222, 4,665, and 7,243 vines/hectare. ■

References

(1) and (2) Extracted from a speech,"Il Sangiovese in Toscana: Sue Origini, Sua Storia, Sua Terra, Sua Enologia," given by Giacomo Tachis at Vinitaly trade exposition in Verona in 1991.

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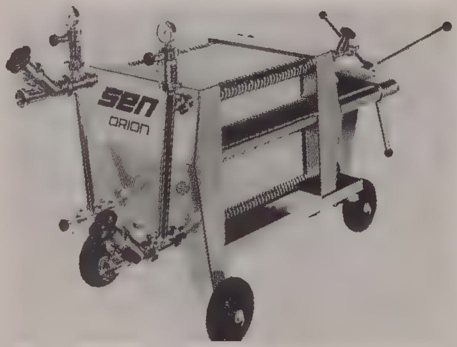
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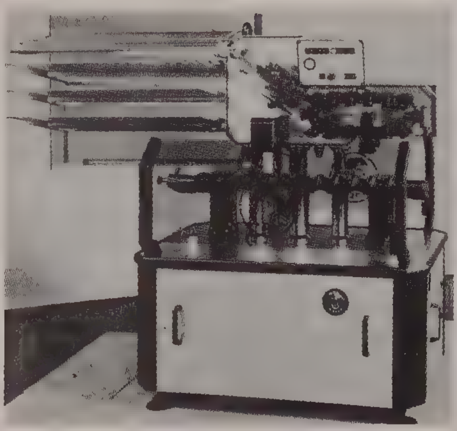
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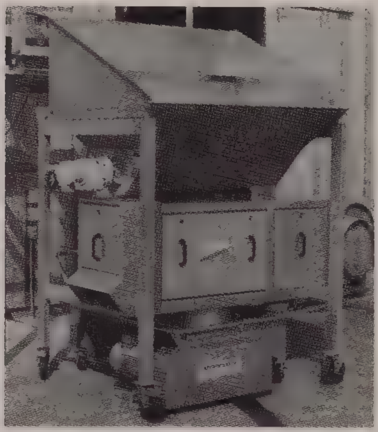
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RED WINES to FILTER or not?

By Gary Baldwin

Introduction

This paper reviews the question of red wine filtration in a logical and rational manner. While this paper will not pretend to arrive at an absolute conclusion, it will present the opinions on both sides of the topic and make some practical recommendations.

In many parts of Australia, notably amongst the so-called 'boutique wineries' and more specifically those producing Pinot Noir, an argument rages over red wine filtration. In the full-bodied red corner are the 'anti-filtrationists' with a long list of arguments against filtration. In summary, they prefer to rack and fine wines until they are sufficiently clarified and then bottle directly from barrel or tank. It is said that this process maximizes color, flavor, and aroma.

In the opposite corner stand the 'technocrat winemakers.' They are generally accused of making wines that are 'too clean' and lacking complexity. Their view is that the wine should be pad- and, in some cases, also membrane-filtered to ensure a stable product that remains in the condition in which it was bottled.

Case against filtration

The actual arguments usually presented against filtration are probably best summarized by some of the throw-away lines, such as: "Filtering removes color and flavor; filtering reduces the weight/body of the wine; so much color and flavor are lost during the process that it is not worth it," etc.

Usually there is some validity to these comments; they are really a summary of the observations that winemakers can make during filter operations. But care must be exercised before drawing conclusions from such observations.

There is also the argument put forward that wine is lost in the filter medium during filtration. Provided the correct filter medium and number of pads or amount of earth is used, this loss should be insignificant.

On closer investigation, one often finds that the real reason for deciding not to filter a wine, was that there had been real difficulty in actually carrying out the filtration. The question that must then be answered, "Why was the wine difficult to filter?" On most occasions, because it had a very high microbiological population, or less often because of an unusually high concentration of polysaccharide or similar high molecular weight material. Such observations are poor reasons for not filtering; in fact the converse is probably true. The wine should have been filtered to remove the problem.

Although polysaccharides rarely cause problems during maturation, high bacteria or yeast populations will almost inevitably, at some stage during storage, put the long-term stability of the wine at risk.

There is the potential for regrowth of the viable bacteria or yeast remaining in the bottle, although often they will only grow to a fairly low population and not interfere dramatically with the flavor or appearance of the wine except to leave a small slimy or muddy deposit. This can often be observed in Australian Pinot Noir wines. On other occasions, the bacterial population will grow to a significant level and alter the flavor and appearance dramatically— creating a wine that is quite unacceptable to most consumers.

But what are the real arguments for avoiding filtration? The filtration steps generally used in Australia include diatomaceous earth followed by pad filtration and sometimes membrane filtration. Each of these filter systems uses a medium that is absorbent and it certainly will absorb color and flavor compounds, although membrane-type filters have very little absorbtive capacity. Therefore, if this process is avoided, then color and flavor will be maximized.

The argument can also be raised that *all* processing steps can and do reduce flavor and aroma, and minimizing the number of operations will benefit the wine.

Furthermore, provided the wine is microbiologically stable, and has a very low microbial population, contains no haze and has had sufficient exposure to oxygen during the making, it is very likely that it will remain stable in bottle.

There does not seem to be any proven test procedure for checking stability of color and other phenolic material in red wine and therefore it is difficult to provide hard data or acceptable criteria/parameters concerning stability, but a medium-bodied red wine that is over two years old and has spent most of its ageing time in oak with a racking every three months, will usually be quite stable.

In summary, provided that there is sufficient time between the end of fermentation and bottling in which to clarify 'naturally', and provided that steps have been taken to ensure a low level of bacteria and yeast and reasonable stability against color and other phenolic precipitation, there is a very good case for not filtering, as long as the risks are recognized.

Where a red wine has had a post malolactic fermentation addition of a considered addition of SO_2 usually between 25 and 50 mg/L and has been held in oak or tank for 12 months with several rackings, the microbiological population is likely to be quite low. That is, the wine would probably be relatively stable in a microbiological sense.

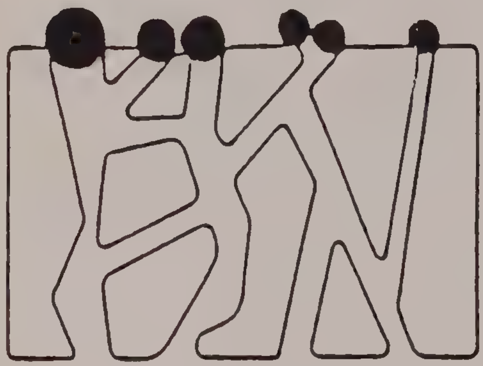
On the other hand, a wine that is less than 18-months-old, finished a malolactic fermentation only nine months ago and has only been racked twice, will probably not be stable and will also be very likely to still contain a viable bacterial population. In essence, there is no short cut — if you do not want to filter, you will have to spend some considerable time and effort to ensure the wine is stable and ready to bottle.

Case for filtration

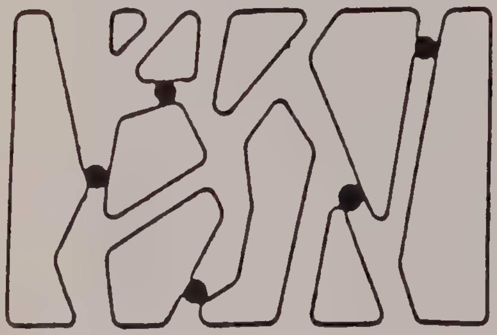
With such an abundance of counter arguments, are there any arguments *for* filtration? Yes, certainly! One of the main arguments for filtration is simply the converse of the discussion presented above. Inevitably the wine is required when still young; cash flow and, hopefully, sales demands often require that the wine be ready. Therefore, only one option is available — the wine must be filtered to ensure its stability, no matter how difficult the task.

Filtration done properly, that is using the correct number of filter pads for the volume of wine, and operating at the correct flow rate, will minimize the loss of flavor compounds. If a wine is relatively low in flavor and color compounds, and the volume of absorbent filter material relevant to the wine volume is high, there will be a noticeable loss of these components. This will be most obvious in the first few gallons of filtrate through the pads. It may also be apparent immediately after filtration, especially with SO$_2$ addition; but it is also usual to observe a recovery of aroma, flavor, and even color within days of completion of the filtration.

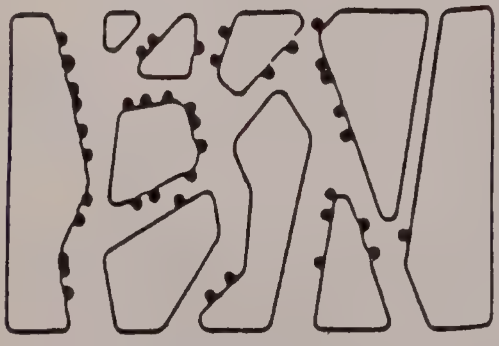
Figure I.
Comparison : Surface filtration vs depth filtration



Surface filtration



Depth filtration-mechanical retention



Depth filtration-adsorptive retention

Given the case presented on many occasions by P.J. Williams[1] and others on the nature of flavor compounds, this result should not be surprising. Williams has shown that many flavor compounds are present in wine in free and bound forms and that these forms exist in equilibrium with each other. Therefore, if a small amount of the free compound is absorbed onto a filter pad, it seems very likely that within a short space of time, the equilibrium will be re-established and the wine will be almost identical to the original flavor profile.

With good filtration techniques, the bacteria or yeast population should be reduced by between 99% and 99.9%, rendering the wine almost yeast or bacteria-free. Any remaining bacteria or yeast should normally be reduced to very low viability by a post filtration addition of SO$_2$.

Difficult wines to filter

To return to one of the reasons often given for not filtering: the observation that the wine cannot be filtered and blocks up the pads. When considering red wines, there are two main causes for blocking of filter pads. They are microorganisms and high molecular weight molecules such as pectins, proteins, and polysaccharides.

As noted above, if wine is regularly racked, it becomes far easier to filter. Problems arise when one attempts to filter, at an early age, a red wine that has been kept under careful and anaerobic conditions. This is why the problem, once again, appears to be worse in Pinot Noir than many other varieties.

Pinot Noir wines are often sold quite young, when in fact, they may be more suited to prolonged ageing before bottling. They are often high in pH, low in SO$_2$, and have a tendency not to settle well. These observations also apply to the other varieties, especially when they are maintained relatively anaerobically and cold. These factors seem to provide an environment which inhibits the precipitation of bacteria and yeast cells.

Recommendations for filtering red wines before bottling

Having explained the options for red wine filtration, if one decides to filter a wine before bottling, the following summary is provided as a guide to the chain of events:

1. Test the wine for protein, pectin, and other polysaccharide problems. (Test details below.)
2. If in doubt, conduct filterability test (using same filter media as planned for use in cellar).
3. Select the correct grade of filter pad and number of filter pads for the volume of wine and operate the filter within the recommended flow specifications.
4. Filter through clarifying pads and add SO$_2$ post-filtering within 24 hours (prior to bottling) to minimize the potential for the remaining bacteria to grow.
5. Filter through sterile pads and directly through pre-filter and 0.45µ membrane filter to the filler.
6. In all cases of filtration, follow the manufacturer's recommendations for filtration flow (litre per pad per hour) and maximum pressure differential.

Protein test — Use standard heat stability tests. Some red wines with low tannin concentration and little exposure to oak may retain proteins which can inhibit filtration. A positive test will require a bentonite addition to remove excess proteins.

Pectin and Glucan tests — Bryce Rankine[2] suggests tests for detecting the presence of glucan and pectin. For pectins in wine, add four to five volumes (50 ml alcohol [96%] to 10 ml wine). The presence of pectin is indicated by the formation of a gelatinous deposit. A positive test indicates that further treatment of the wine with pectinase enzymes is required.

Fruit that has been infected with *Botrytis cinerea* may contain significant amounts of glucans; these complex carbohydrates render wine extremely difficult to filter. Glucans can be detected by the addition of 5mL of alcohol (96%) to 10mL of wine; the formation of a filamentous precipitate indicates the presence of glucans. Commercial preparations of glucanase enzymes are available for the treatment of these wines.

Filterability test — Rankine[2] proposes a standard test for filterability of wines. One litre of wine is filtered through a standard 25mm diameter 0.45µ membrane filter at a *constant* pressure in a fixed time (usually about 10 minutes).

Note the volume filtered in two 60-second intervals: the first interval between the 30-second and 90-second interval, and the second between 120 and 180-seconds. The ratio of the number of milliliters filtered in the first period over that filtered in the last period should not exceed 1.5. If the ratio is above 1.5, the wine will be difficult to filter.

Filtration flow/pressure — As a guide, a normal flow recommendation for pad filtration by the Schenk[3] Filter Co. (only) is shown in Table I. It is advisable to obtain correct flow and pressure data from individual sheet manufacturers.

Table I

Schenk recommended flow rates and pressure drop for pad filtration of wine. (40 x 40-cm pads)

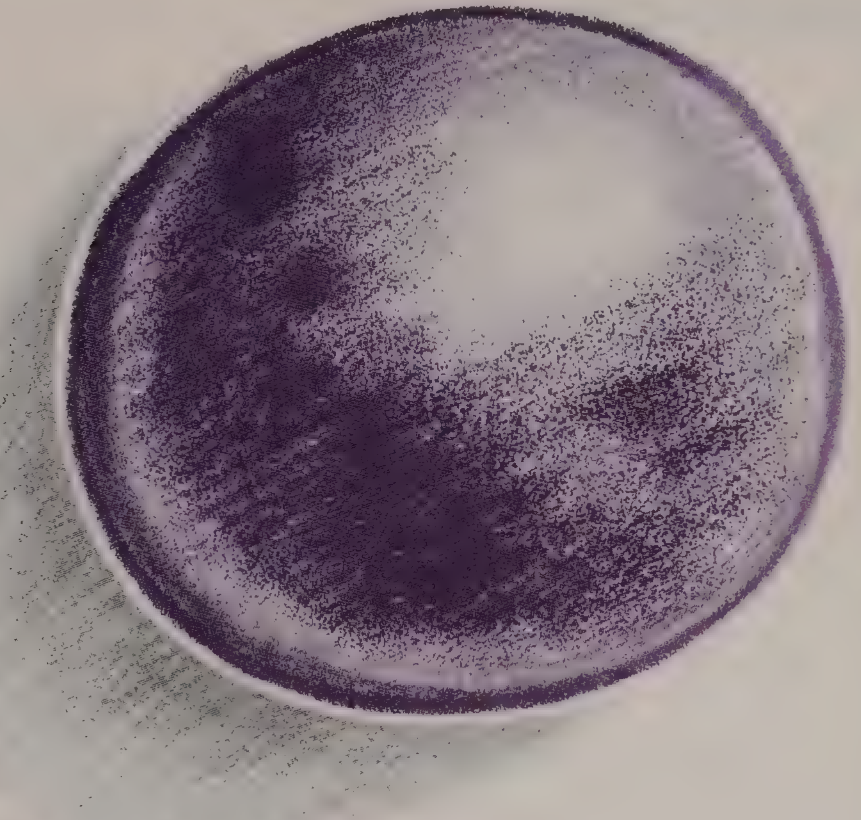
	Clarifying Filtration	Sterilizing Filtration
Flow (litre/hour/pad)	750	350
Maximum pressure differential (bar)	3	1

A point worth noting is that filtration will be much easier at higher temperatures. Attempting to filter red wines that may be hard to filter anyway, at temperatures around 8-12°C (45-55°F), will be doubly difficult; if possible, warm them to at least 15°C (60°F) to aid filtration.

Sulfur dioxide addition — The addition of an amount of sulfur dioxide to the freshly filtered wine should be enough to provide some (0.8 or 0.5) molecular sulfur dioxide which is lethal to bacteria. As this will only last for some hours before it is bound up by phenolics and other material, it should be added as soon as possible after filtering, but no more than 24 hours before bottling.

Value of membrane filtration

Pad filters are depth filters (refer to Fig. 1) and as such, the micro-organisms are removed by adsorption rather than a sieving action. It is not uncommon to observe that although the pressure does not rise significantly on the filter press, bacteria will pass through. In this situation, the bacterial population was too high for the volume of filter medium and all the active sites were blocked — and



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the bacteria continued to flow through the filter relatively unimpeded. It is here, especially, that a membrane filter is imperative. As a surface filter, it simply blocks the flow of the wine with a large bacterial population — signalling to the operator that there is a problem

Membrane filtration is actually an insurance policy; when the membrane blocks up it is indicating that the filtration process has broken down further upstream. If the membrane was not in place there is a good chance that the operator would not have detected the breakdown.

Conclusions

It seems a quite reasonable risk for a small boutique winery with a known market, confidence in production techniques, and with reliable testing procedures, to be able to bottle red wine without filtering. But it should be recognized that there are risks — the main one being the potential to form a microbiological haze or deposit in the wine.

Filtration of red wines can be avoided, but there are significant risks in so doing. The risks are increased with higher pH, low SO_2 concentrations, high yeast and/or bacteria populations, and also at low alcohol concentrations.

Pinot Noir wines often exhibit all of the above risk factors. This is why unfiltered Pinor Noir can sometimes contain small slimy or smudgy deposits on the cork or bottle; usually bacteria have grown. If this is not a concern in marketing the product, then there is no problem — but it is worth being aware that the consumer is often not as educated as is thought, and therefore such deposits are considered to be quite negative.

Filtration is, by far, the safest path for a winery whose wines need to be consistent in quality from year-to-year, and on the market quickly.

It would be difficult to present a better summary of the position than that provided by Peynaud:[4]

"Resistance to the practice of filtering arose from the reproach made that it tended to thin down and emaciate the wines. Nevertheless, if every precaution is taken to prevent accidental off-tastes due to the use of filter products and the dissolving of oxygen, it may be stated that the mechanical action of filtering has never had a negative influence on quality. As careful tastings have always proved, the finer the filtration, over sterile pads or over membranes, the more the wine is improved." ■

Gary Baldwin operates Oenotec Consulting Services in Australia. This paper was originally published in ***The Australian Grapegrower & Winemaker****, April, 1992.*

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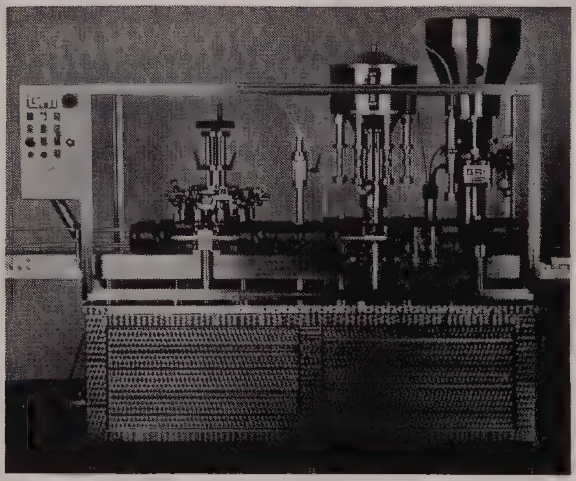

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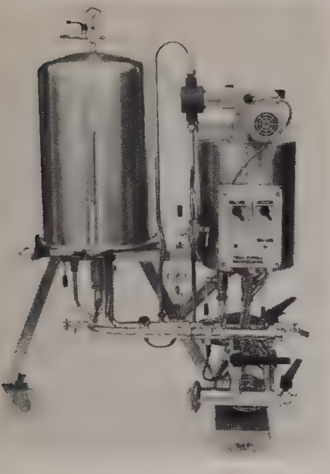

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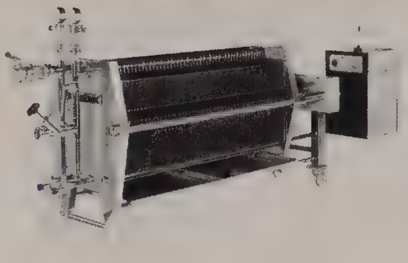

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RLS Equipment

RLS Equipment offers the Strassburger line of filtration equipment, which includes plate + frame, DE-lees, and cross-flow filters.

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PART IV

FOCUSED HIRING:

Interview techniques that truly tell

**By Carolyn Silvestri,
The Personnel Perspective**

Editor's Note: Part I of this series defined 'focused hiring' (**PWV***March/April'93); Part II discussed applicant evaluation* (**PWV** *May/June'93); and Part III discussed the 'legal maze'* (**PWV** *July/August'93).*

You've advertised the job and screened the applications. Now it's time to schedule interviews with the best candidates.

To take you smoothly and logically through the process of finding the right person for the job, use the interviewing techniques outlined below to ensure that you get all the information necessary to make your hiring decision.

Before the interview

The first steps to planning an effective interview include evaluating your needs, establishing your selection criteria, and developing a list of questions that focus on assessing each applicant's ability to meet your needs and be successful in the position applied for.

Prior to the scheduled interview, set aside several minutes to focus on the task at hand. Take time to review the resume and application before the candidate arrives, make notes about questionable items, and identify any areas of concern or special interest for which you need answers or explanations.

Conducting the interview

The key to conducting an effective interview is to be well-prepared, well-organized, focused on the applicant and the interview, and able to put the applicant at ease. To conduct a successful interview, follow these tips:

- *Arrange for privacy.* Don't allow interruptions; give the applicant your full attention.
- *Greet the applicant warmly.* Keep in mind that as you size up the applicant during those initial minutes, he or she is also forming first impressions about you and your winery.
- *Keep the applicant relaxed* with small talk before the formal interview begins.
- *Take notes* to help you remember key things said by the applicant. To make the applicant more comfortable about the note taking, explain that the notes are intended to help the applicant stand out in your mind.

Look at the past for future performance

The best indicator of future job performance is past job performance. Gathering information about past job performance probes for proof or demonstrations of actual performance. Examples of past performance-oriented questions include:

- *"Outline the major responsibilities of your last three jobs."* This gives you specifics of the applicant's past experience that is 'proof' of performance as opposed to the resume, which only focuses on the areas the applicant feels are his or her selling points.
- *"Describe a typical week in your current (last) job, and highlight the satisfying and enjoyable parts as well as the parts that you considered to be unenjoyable or especially challenging."* Asking this type of question helps you determine whether the applicant's experience has been in an environment similar to yours, what areas he or she is likely to succeed in, and what areas may be problems in the future.
- *"Describe the worst day (or week) of your working life."* Listen to the answer and then ask, *"What do you believe you handled well?"* After listening, ask, *"The next time you encounter a situation such as this, what will you do differently?"*

This series of questions tells you what the applicant considers stressful in the workplace, how he or she handles stressful situations, and whether he or she benefits and grows from such experiences.

- *"In each of your last three jobs, what were your employers' expectations of you as an employee?"* Listen to the answer and then ask, *"Of those expectations, which did you feel were unreasonable and why?"* This will help you assess whether the applicant's work style is a match for your winery.
- *"Tell me how you were trained to perform the duties of each of your last three jobs. How long did it take for you to become proficient in each new skills area, and how did you develop that proficiency?"* How an applicant answers this question can tell you a lot about how he or she learns and whether you can meet his or her training needs.

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Closing the interview

Effectively closing the interview is one more step toward ensuring that you've gathered all the information you need to make a good hiring decision. Always remember to:

- Invite questions,
- Provide information,
- Explain the steps that will be followed next,
- Thank the applicant.

Common mistakes

It is always helpful to occasionally evaluate your interviewing style to make certain you are not unconsciously practicing these common interviewer mistakes:

- Too much interviewer talk.
- Telegraphing the 'right' answer.
- Jumping to conclusions.
- Allowing biases or prejudices to obscure your objectivity.
- Not listening.
- Asking questions that are clearly answered on the resume or application.
- Asking questions that are unrelated to the job.
- Being unprepared.

After the interview

Following the interview, take a few minutes to jot down notes. Identify what you liked about the candidate and make note of any areas of concern. If you realize later that there are questions you failed to ask, call the applicant and ask the question(s) over the phone.

Human nature being what it is, there is a tendency to want to make a decision about the candidate immediately after the interview is over. Fight the urge; remain open-minded and objective until you've interviewed all the applicants.

Once you've identified the person you believe is the best candidate for the job, arrange for a second interview, and, if possible, have the applicant interviewed by someone else in your winery during this follow-up visit. Second interviews and second opinions are valuable as you make your hiring decision. ■

(Next: Part V of this series will discuss checking references, making a decision, and extending offers.)

Carolyn Silvestri is founder and owner of The Personnel Perspective, a human resources consulting, recruiting, and executive search firm in Santa Rosa,CA, tel: 707/576-7653.

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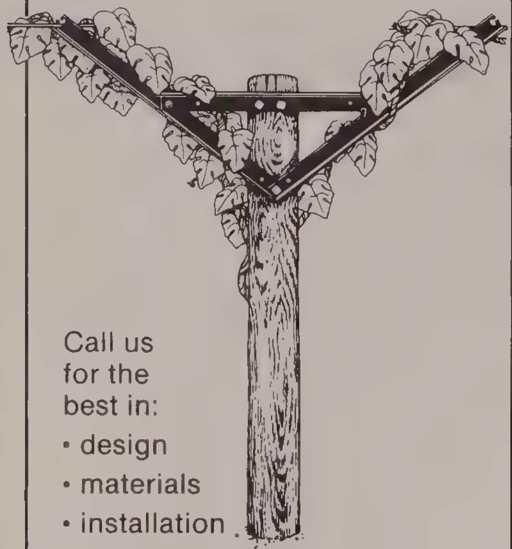

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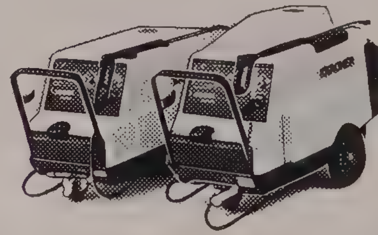

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Future of the wine industry:

CO-OP SALES

By Norman Beko,
Cottonwood Canyon Winery
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Can a broker/distributor generate the market attention your wines must have to enable you to build a successful operation?

More than 750 California wineries plus another 1,000 or more elsewhere vie for the attention of the restaurateur and retailer. For an elite few, name recognition alone draws sufficient market interest to sell their wines, but most of us require the services of a third party to represent our interests.

The current three-tier distribution system (the winery, the distributor/broker, restaurateur/retailer and finally, the all important consumer) favors those few wineries already fortunate enough to have created adequate demand for their wine. Some wineries even have a fourth tier, a marketing organization to help create attention for their brand.

The tiered system increases the price that the consumer pays since, at every tier, a percentage is added to cover costs and profit. This so-called profit, however, seems hardly to be that, since the bankruptcy or merging of distributors is accelerating (just as the wineries themselves are rapidly changing hands).

Because of these closures, the bigger distributors are getting stronger. As they become the more and more dominant players in their respective markets, does each individual winery really believe that its influence will increase?

Do the existing channels of distribution really create demand for our wines or are they merely providing a convenient location to accept orders and a warehouse delivery system from which product can be delivered?

Newer wineries or wineries without name recognition face an ever more congested uphill battle to enter the system. Why would broker/distributors want to add another Chardonnay anyway when they probably aren't effectively moving the products they already represent?

Since the distributors require 25% to 30% gross profit margin to survive, but obviously can't survive, those wineries who want to influence their future should consider funding their own network in a given market and working together to form a sales co-op.

To illustrate, if a winery is generating $200,000 of sales in a territory, it is providing the distributor with a discount of $50,000 to $60,000 to cover cost of warehousing, trucking, and sales. If the winery attempted to perform these functions itself, $60,000 wouldn't cover those costs, but if it joined with other wineries in a similar situation, the numbers start making economic sense — in addition, the winery has gained significantly more control and influence on the outcome.

Successful sales co-ops will be innovative, taking advantage of technology and techniques that many in the industry have been reluctant to consider. An effective information management system using computer software, which provides varietal sales analysis by salesperson and account as well as profit analysis by salesperson, is the first step.

Add a knowledgeable manager and a program of limited telemarketing, and a salesperson can effectively manage an account/prospect base of 300 or more, instead of the 100 or so most sales individuals handle now. (The procedure for telemarketing involves the cycling, via telephone, of selected accounts by size and only those accounts who accept the telephone approach.)

Objectives

What are the objectives of a sales co-op?

1) Control — You direct where your product is placed, what price the account pays, when it is received, and the follow-up necessary to sustain your volume.

2) Feedback and market intelligence — You receive the information necessary for you to determine product mix, pricing, packaging, style, bottle size, etc.

3) Target marketing — You can not only influence which accounts should have your wine, but also specifically direct your representative to develop these accounts. You can avoid having six retailers in six blocks having your wine with price variances of 25%.

4) Pricing control — This major feature can't be emphasized enough. I have witnessed sales representatives giving accounts one or two bottles per case as 'samples' because the account stated that the price was too high. I prefer to control samples more effectively and let customers know that, in fact, our prices are high but...

Making a co-op work

In establishing an integrated operation such as a co-op, remember that you are creating a company that will control your future. Selecting partners, markets to approach, future expansion guidelines and so forth, are not to be taken lightly since without a successful sales effort, you have no future.

Remember also that this is not a money savings issue. In fact, in the beginning, sales volumes may be less, and you may have to invest in the future by funding an initial loss. If you form a co-op, it should be because the co-op will be a more effective means of creating and satisfying demand for your wine.

How would this co-op sales organization operate? You must consider several questions before you launch the co-op. Should you select wineries from the same or different appellations? How many wineries are manageable in the program short-term and long-term, since these will undoubtedly be different?

At the outset, draw up a charter that spells out as much detail as possible about your goals, quota, salesperson prospect base, prices, account profiles, and anything else that can be defined before you enter into an agreement. To begin, identify and target a market that you can have easy access to, and, of course, you must have a wholesale permit.

Here are some ideas to help you start planning:

- Salaries should be divided equally between the wineries while commissions should be paid based upon sales or, preferably, collections.
- Start off slow and work out the bugs before you expand. We are going to start with three salespeople in our territory and two wineries, expanding as we can absorb the growth.
- Initially, to keep costs under control, one of the wineries should provide the billing and associated costs, except those costs that will be new and directly due to the operation. For example, use your existing computer system and fax machine, but have the organization purchase software, if required. The wineries in the organization share increased costs.
- Make a provision for the sales force members to have the opportunity to become owners in the organization through an employee stock ownership plan. As long as they remain employees, they can buy stock in the company. A formula is devised to determine 'share cost.' This formula is also used to determine the cost of 'selling back' the stock. This is not a sales incentive, but an employee retention incentive whose major secondary goal is to *reduce* personnel turnover.
- Start in a territory to which you have easy, low-cost access, because of close proximity or an existing manageable volume. You want to be able to have a high penetration of accounts in the smallest geographic area possible in order to maximize your sales staff's efficiency.
- Auto, telephone, travel, and entertainment and all other sales and administrative expenses should be shared according to an agreed upon formula in your incorporation document.
- Initial funding must be agreed upon, including the value of the inventory that each winery contributes. Additional capital provisions must be considered as well as how collections will be handled and distributed. If cash is generated over what's required to handle the operation, decisions about whether to expand or return funds to the investors should be made and clearly stated before operations begin.
- Each varietal being sold must have winemaker notes available for the sales staff and accounts and be kept current.
- Generally, wineries should be from different appellations, with the exception that an appellation can be represented by two wineries which do not have the same varietal in their portfolio.

Be sure you offer accounts a representative sample of wines, comprising a cross-section of what's available. To illustrate, a co-op consisting of one winery from the areas of Santa Barbara, Napa, Sonoma, Mendocino, and from Oregon and Washington states would provide customers with a good cross-section of wines.

- It would be better if the wineries' case production was relatively balanced between each winery. For example, a 5,000-case Santa Barbara winery balances with a 10,000-case Napa winery but not with a 50,000-case winery. The objective would be balanced attention to each account.

The wineries in the program must have the ability to create printed wine

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lists, promptly, in order to maximize the service to their restaurant accounts.

Remember, your sales staff will get appointments and sales if they can offer a strong portfolio of wines. I do not believe that any winery should offer more than four varietals.

For example, a winery offering 12 different bottlings at one time can't effectively be represented, whereas a winery offering a smaller selection can generally do better. To illustrate, Cottonwood will only offer Chardonnay and Pinot Noir because that's what grows well in Santa Maria. Yes, equally good Cabernet can be found, but not consistently, so why do it? Look at Sonoma-Cutrer, they do very well at one varietal.

The average selling price to the trade should exceed $115 per case simply because we cannot, and therefore should not, attempt to compete with the wineries who have economies of scale.

- Wines in the program will be under the family plan, for those wineries that provide a discount. Quantity discounts apply to ***all*** sales even if one case from each winery adds to the discount in each sale.

Provide strong sales support

Managing the sales staff is one crucial function of the co-op. Provide information in sufficient detail to give the salesperson everything he or she needs to sell, sell, sell, and to allow the administrative procedures to function with few verbal instructions.

Establish a reporting structure which includes an account history of orders and contacts, sampling, and routing of each account (or the frequency of day/time that accounts will be visited or contacted). The advent of the computer makes this function feasible.

Accounts and prospects should be grouped according to their importance. For example, one possible grouping would be to classify accounts by those that you want to talk to every two weeks, every four weeks, and every eight weeks. Other methods could include grouping by revenue potential.

Many wineries have satisfactorily used brokers, distributors, marketing organizations, and even a marketing co-op. But this system challenges these traditional approaches because the 1990s are presenting a significantly different challenge; not only to place your wine, but to get the consumers to try it *often* enough to have demand exceed supply — the optimum goal. We recommend attending as many consumer tastings as possible to stimulate demand and recognition.

When we recently introduced the 500ml bottle in 6-bottle cartons, I was told many times that "I cannot sell 500s" even though the account never tried the wine or the concept.

I did not give up because I knew that the consumer was becoming more conscious of excess drinking, so eight months after the initial introduction, we increased production of the 500s to 25% of our total because we helped stimulate the demand by attending every consumer tasting we could find. We now are seeing restaurants add a section on the wine list "Perfect for Two."

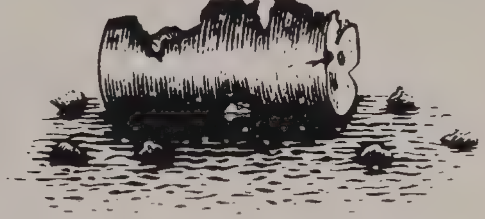
Let's not forget service, timely and accurate. Mistakes will occur, service is correcting those mistakes promptly.

You must be able to stimulate demand by actively promoting staff training and by working the customer base at the restaurant or retailer, with events sponsored by the co-op in the territory, for example.

The key to the success of the co-op is shared expenses, quality but limited wines, defined goals for each participant, and innovative leadership. The group members must be responsive to each other and to the customers that the co-op serves. There is no room for the prejudices and jealousies that exist in some circles. The goals are to promote the group and all wines from each winery.

I want to thank several people who reviewed this concept before you read the above. Dan Wilson, Greg Gilloogy, and Jeff Maiken all contributed many valuable comments. In addition, they all provided a single most critical comment, that is, I made it sound too simple. Well, maybe. If success were easy, how many more wineries would there be?

When I started a computer graphics firm in 1971, I had been a successful salesman for only two years and only out of college for about seven years, and I was slightly short of capital — I had none. When I sold the company 20 years later, we had 11 offices in the U.S. plus offices in Canada, Australia, England, and Germany, and no debt. My competition was none other than Xerox and a Lockheed division, who were slightly more capitalized than we were. The secret to that success was to take our products to the customer, not a very complicated mission, just like the sales co-op! ■



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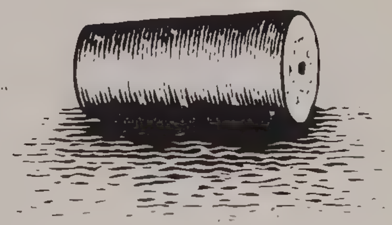

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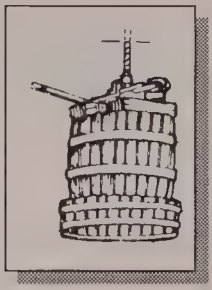

By *Patrick Campbell*

If we don't succeed, we run the risk of failure

Thus spoke Dan Quayle about some long-forgotten issue. His words apply no doubt equally well to the wholesale assault on moderate drinking under Prohibition. During the sorry tenure of the 18th Amendment, the percentage of teetotaling Americans increased. But so did alcohol abuse. This was the miserable legacy of a failed, but well-intentioned, social policy that sought to rid America of alcohol abuse by eliminating alcohol availability.

Too bad the Temperance Movement hadn't paid attention to Abraham Lincoln: "Prohibition will work great injury to the cause of temperance. It is a species of intemperance within itself, for it — attempts to control a man's appetite by legislation — [it] strikes at the very principle upon which our Government was founded," he said.

Prohibition failed because it relied on enforced abstinence to quell abuse. By focusing on the bottle rather than on the man, it took into account neither the abusive drinker's psychological need to drink nor the moderate drinker's desire to enjoy alcohol responsibly.

Not surprisingly, the abusive drinker merely procured his drink illegally and kept on drinking. And the moderate, non-abusive drinker (terms meaningless to the Prohibitionists), stopped drinking altogether, drank less, or continued drinking under the orders of an amiable and wise doctor.

Education and treatment

In the decades following the repeal of Prohibition, the Temperance Movement gave way to the newly established National Council on Alcoholism (NCA), which viewed drinking problems as the result of uncontrolled drinking by a small group of alcohol abusers, rather than as a broad-based social evil. This viewpoint was known as the 'disease model,' and it marked a profound change in social policy. Where Prohibitionists had concentrated on the drink itself, the NCA (a champion of anti-Prohibitionism) considered the aberrantly abusive drinker himself to be the problem.

The NCA viewed the alcoholic as a 'defective individual,' whose behavior resulted from his disease of alcoholism. Accordingly, post-Prohibition social policy emphasized the social unacceptability of drunken behavior and fostered rehabilitation programs aimed at the sick alcoholic. Public and social policy were appropriately centered on education and treatment.

Because post-Prohibition alcohol policy emphasized the man, rather than the bottle, it promoted the clear distinction between responsible use and abuse, a distinction that allowed these policies to be effective during the 50 years following the end of Prohibition in 1933.

The success of man-centered policy reached its zenith during the late 1960s and mid-1970s, when liver cirrhosis fell by 21.7%. The death rate from drunken driving fell by some 43%, even while per capita consumption rose by 20%.

Alcoholics entered rehabilitation programs in unprecedented numbers as the social stigma attached to their behavior declined. Abusive drinking in young people decreased because the 'forbidden fruit' mystique associated with abstinence had declined. Clearly, the 'education and treatment model' was successful.

This emphasis on the drinker rather than on the drink obtained until the late 1970s, when public policy shifted once again toward alcohol control. The disease model gave ground to the 'control model' of alcohol policy. Or as the social scientists say, 'alcohol-based problems' replaced 'alcoholism' as their concern.

Protecting the public at all costs

That's how things stand now; focus has shifted back from the man to the bottle. The distinction between use and abuse is

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once again blurred, in the eyes of the policy-makers, no middle ground of moderate and responsible alcohol enjoyment exists between the extremes of abstinence and abuse. That's why the proponents of the control theory are legitimately labeled 'neo-Prohibitionists.'

Control theory is rooted in the fundamental premise that reduction in the supply of alcoholic beverages will inexorably lead to a reduction in alcohol abuse. And like all successful social movements, the control theory is rationalized by an academic study. In this case by one Sully Ledermann, a French social scientist writing in the 1970s, who concluded that a direct correlation existed between alcohol availability and alcohol abuse.

Ledermann's thesis was all the new breed of health professionals and government policy makers needed to hear. That the Ledermann's study was dismissed by the greater scientific community as fundamentally flawed was of no consequence to them. No matter; the theory fit the need. It bolstered their agenda admirably: the greater the availability of alcohol, the greater the problems. The neo-Prohibitionists now had the requisite vindication for their credo.

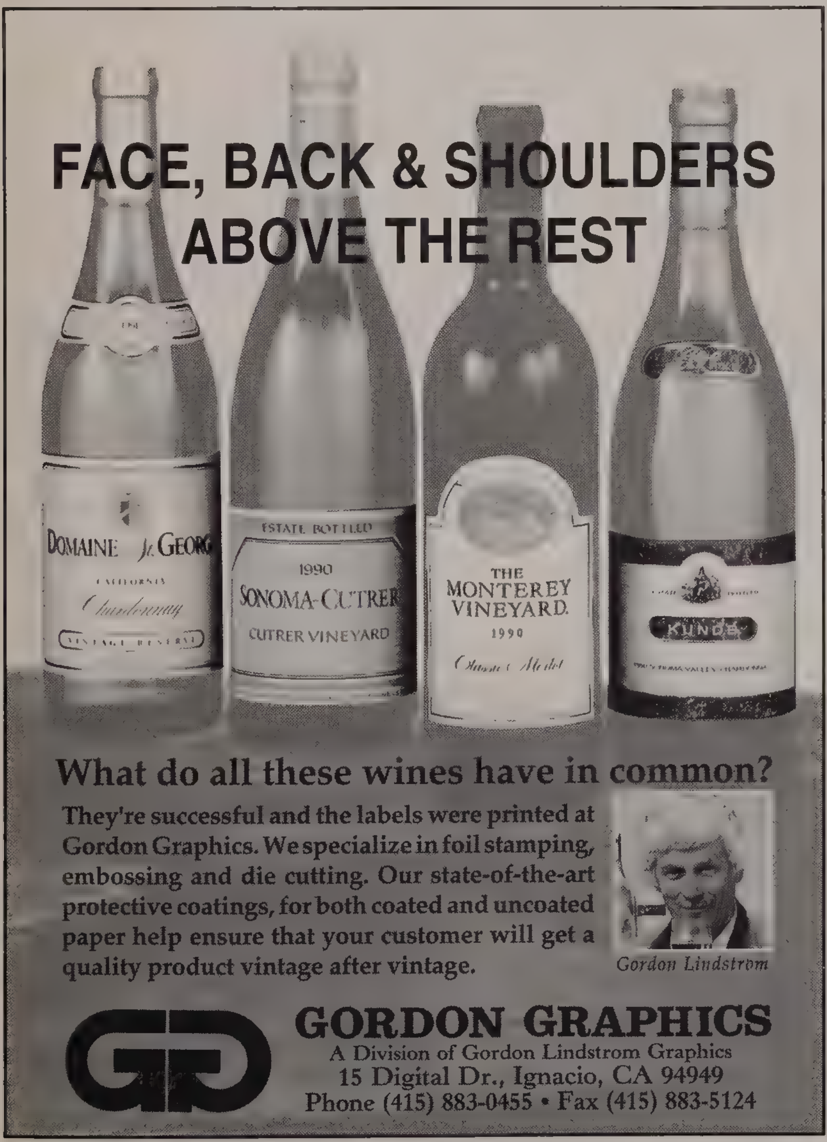
By the late 1970s, they had brought their agenda to the highest levels of government — into the White House itself: control theory demanded that social policy be directed by public (*i.e.*, governmental) policy, they argued. The National Institute on Alcohol Abuse and Alcoholism (NIAAA), the emerging source of alcohol public policy, espoused the control theory as its cynosure and the justification for lucrative government grants. The neo-Prohibitionists had achieved complete success.

They asserted that if reduction in consumption was the key to lowering alcohol abuse, then the government itself must become involved through its many arms. It was no longer enough to focus merely on the abusive drinker: lowering consumption demanded a broad-based assault on the generally benign American attitude towards alcohol.

Because there was a potential abuse lurking behind every moderate drinking activity, it was the government's obligation to overstate the dangers of consumption. Better, after all, to scare the hell out of the moderate drinker than to risk an accident. The desire to decrease drinking at all costs, then, ran roughshod over facts.

The late 1970s ushered in the era of government-sponsored hyperbole and simplistic, but grandiose, claims, all designed to lower consumption and increase intolerance of personal choice:

- "Don't drink and drive." (Even one drink can make *you* a statistic.)
- "In the first 18 years of life, the average child sees 100,000 beer commercials." (That's 15.22 commercials every day, every year, from birth to year 18; that's absurd!)
- "Drunk driving is increasing." (Actually, it has decreased every year in the last decade.)
- "Just say NO!" (Anything but abstinence is dangerous.)



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- "50,000 alcohol-related deaths on the highway per year." (That number includes a passenger or pedestrian with trace amounts of blood alcohol killed by a sober driver, or a drunk pedestrian who is killed by a sober driver).
- "10% of the population drinks 90% of the alcohol." (A complete falsehood that's provided the neo-Prohibitionists with a well-worn chestnut for years.)
- "Even light drinking can cause fetal alcohol syndrome." (False! But the foundation of the drinking-while-pregnant scare tactics.)
- Alcohol advertising is the major cause of alcohol problems." (Never proven, often disproved.)
- Alcohol and other drugs." (Cocaine, heroin, speedballs, and alcohol no difference, no distinction, in the eyes of the neo-Prohibitionists.)
- "Higher alcohol taxes reduce consumption." (The abuser buys cheaper stuff and keeps on drinking, the moderate drinker drinks less).

And so on. It's not surprising, then, that the Bureau of Alcohol, Tobacco, & Firearms holds fast to the maxim that "we hold that all therapeutic claims, regardless of their truthfulness, to be [sic] inherently misleading..." Translation: Telling the truth about moderate consumption's salubrious effects might encourage abuse, therefore, governmental paternalism supersedes the public's right to make informed choices.

During the past decade, the list of alphabet soup agencies receiving federal tax moneys to reduce alcohol consumption at any cost has been nothing less than astonishing: NIAAA, CSAP, WHO, NCPID, ACAP, CSPI, ARG, AI, IIHS, NCADD, NPRC, TRB, NCAAP, ADPA, NCA, APHAADP, AMA, NAS, PDIY, ADAMHA, NHTSA, TSB, NFWDFY, NCADY to name literally but a few. To enumerate all the Executive Branch and Congressional agencies and the multitude of state, local, school, advocacy, medical, social service, and concerned citizen groups that receive public funds would take as many lines as the rest of this piece. And then some.

Like the missionaries of old who came to do good and ended up doing well, many concerned and well-intentioned health professionals have become comfortable feeding at the public trough. Even completely objective observers of the genre have called them "moral entrepreneurs cloaked in public-health robes [who] are advancing their personal agenda for the public's welfare." The health groups they represent are "expansionist industries with power and profit motives [whose interest] it is to play up health risks." Like the purveyors of the $2,000 toilet seat and the $749 hammer, many neo-Prohibitionists enjoy cozy relationships with the governmental hand that feeds them.

Part I (**PWV** March/April'93, page-5) ended with the following question: "But if the control theory is illogical, impractical, and doomed to failure, why do apparently well-educated academics and other smart people espouse it?" By now, the answer should be emerging.

In Part III, we will see that putting an end to alcohol abuse — even if it were possible — may not be in the best interests of many health professionals and government agencies that direct alcohol policy. Job security, access to grant moneys, career opportunities, and political correctness are powerful motivators, after all. ■

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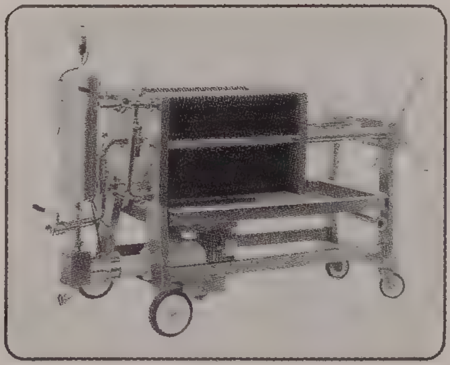

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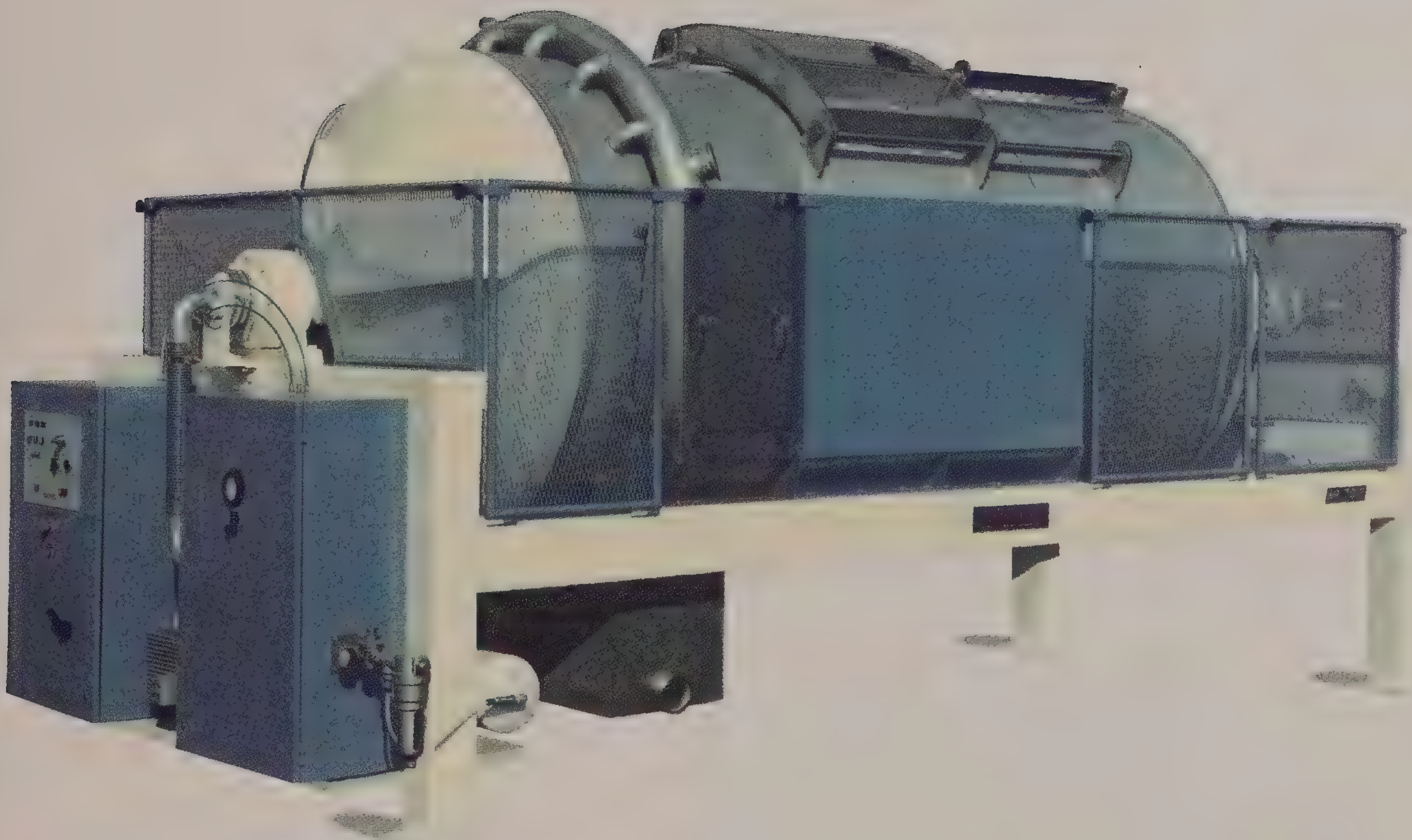

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By Dr. Richard Smart

Two golden rules of viticulture

In my travels around the world consulting to clients of different backgrounds and beliefs, I have learned the value of trying to distil some rather complex biology of the grapevine into simple, but hopefully, universal rules.

I want to explain the two rules I feel are most important for vineyard owners to follow. These are the "Two Golden Rules of Viticulture."

If I thought they were original, I would call them 'Smart's Laws,' but it seems that many of my good ideas are not original; most of them I learned from Professor Nelson Shaulis while a graduate student at Cornell University in New York.

I have had the opportunity to learn many other good ideas from friends and colleagues around the world, and I count commercial grapegrowers as a valuable source of viticultural wisdom.

These golden rules are particularly applicable to modern vineyards, which are often excessively vigorous, out of balance and shaded, as I have discussed in previous columns. Why are modern vineyards more likely to suffer these problems?

The modern viticulturist is able to avoid stresses to the vine due to shortages of water and nutrients, and is also able to avoid the effects of most weeds, pests, and diseases. But he or she is apparently rewarded for this good effort by the sight of a vineyard full of leaves.

It seems that we have been more successful in growing leaves and canes than fruit! Put another way, I say our canopy management practices have yet to improve to the same level as those of irrigation, fertilizer, pest, disease, and weed management.

Importance of vineyard balance

For vineyards to produce sufficient quantities of quality fruit, shoot growth needs to be balanced with fruit yield. If there is not enough shoot growth relative to the yield, we say the vineyard is 'over cropped' but perhaps more appropriately we should say 'under leafed.' Such vineyards are typically of low vigor, which in turn, is due to some stress such as pests, weeds, disease or perhaps a soil environment which hinders root growth.

The more common condition, however, is when the vines are 'under cropped' or 'over leafed.' I must say that this condition is so common that many folks regard it as normal. The appearance of vigorous shoots is symptomatic of this condition.

In spring, shoots grow quickly and the stems are thick, with large leaves and often many active lateral or side shoots. By midsummer, the shoots can be easily six feet or more in length, and because they can no longer support their own weight, they overlap and fall across the canopy. Of course, such canopies are heavily shaded unless some form of canopy management is used.

There is an important relationship between the above and below ground portion of the vine, which is not always appreciated. Vines growing in a deep fertile soil, or with a vigorous rootstock, or those well-supplied with water and nitrogen have a large root system. The root tips are the site of important hormone production which regulate fruit and shoot growth. The root system is also an important reservoir of stored foods for the vine. In other words, the bigger the root system, the bigger the vine's potential for fruit and shoot growth.

There are several indicators of the size of the root system. Both the amount of shoot and fruit growth and the trunk diameter are two such indicators. Probably the easiest way to quantify this, however, is by weighing the prunings in winter. The one-year-old wood is simply collected from a vine at pruning and weighed. Studies have shown that this weight is proportional to the vine's leaf area the previous year.

Golden Rule #1 relates to creating a desirable vine balance. If a vineyard has a large root system and a high potential for growth, then more buds must be left at pruning in order to balance the vine, otherwise, the individual shoots will be too vigorous as described above.

However, leaving too many buds at winter pruning will cause the growth of individual shoots to be restricted, and perhaps delayed ripening through 'over-cropping' or 'under-leafing' as well. Rule #1 relates the number of buds to be left at winter pruning to an estimate of the root system size, estimated by pruning weight.

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GOLDEN RULE #1:

LEAVE ABOUT 12 TO 16 BUDS PER POUND PRUNING WEIGHT.

Experience will teach you how to modify this rule of thumb for your particular vineyard. If you are in a cool region, leave 12 rather than 16 buds per pound. For Pinot noir, which requires a larger leaf area to fruit weight ratio for good table wine quality, leave 12 rather than 16 buds. Similarly, leave 12 buds per pound for varieties with larger than normal bunches.

Importance of open canopies

Rule #2 tells how to produce open canopies, and can also be used as a guide for winter pruning and shoot thinning. If shoots in a canopy are too close together, there will be too much shading, and yield and quality will be less than the potential.

If, on the other hand, the shoots are too far apart, then sunlight will be wasted as it falls on the vineyard floor. For vertically shoot-positioned canopies where the vines are in balance, studies have shown that about five shoots per foot gives a canopy with sufficient gaps so there is not too much shoot and fruit shading, and little sunlight is wasted.

It is more difficult to develop a rule of thumb for the typical California or Australian sprawling canopies, because once the shoots grow more than about three to four feet in length, they cannot support themselves and fall down to create shaded canopies.

GOLDEN RULE #2:

PRUNE OR THIN THE CANOPY TO ABOUT FIVE BUDS OR SHOOTS PER FOOT OF CANOPY LENGTH.

With time, your local experience will allow you to modify this rule to suit your own vineyard and varieties. For example, non shoot-positioned canopies can have more than five buds per foot without necessarily being shaded, and high vigor shoots should be spaced further apart, say three or four per foot.

Simultaneously applying rules #1 and #2: the tricky part

The observant reader will have already started to think: *Wait a minute.* How can there be two rules to apply? Both of which are to be used at winter pruning? What if they conflict? Or what if it is impossible to satisfy both rules?

That happens all the time. Consider a typical moderate to high vigor Cabernet Sauvignon vineyard in the Napa Valley, with vines spaced 8x12. In early winter, we measure a few vines and find the average pruning weight to be about six pounds. Applying Rule #1, we will want to leave 16 buds per pound (Cabernet being a vigorous variety), so that means 96 buds.

Applying Rule #2 suggests we want to leave five buds per foot of canopy, or about 40 buds. So Rule #1 says leave 96 buds, Rule #2 says leave 40 buds. They cannot both be right, or can they?

Let us think about the implications of following one rule, and

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disobeying the other. Leaving 96 buds as suggested by Rule #1 means that if there were 100% bud break, then there will be 96 shoots on the vine, or 12 per foot. This value is more than twice the value indicated by Rule #2, and we can expect the canopy to be dense and shaded.

What will happen if we follow Rule #2? Pruning to only 40 buds means that individual shoots will be too vigorous and out of balance, and the canopy will be shaded anyway because of long shoots, large leaves, and plenty of lateral growth.

Interestingly, different countries and regions have developed different approaches to this dilemma. In California, the tendency is to follow Rule #2 at both pruning and desuckering; while the resulting spur and shoot spacing are good, the shoots are typically over vigorous. These shoots become so long they cannot support themselves, overlap each other and create a dense, shaded canopy.

In Australia, the common attitude is to follow Rule #1. The vines are pruned to many buds 'to control vigor, mate.' The resulting bud and shoot density is high, and there may be, for example, 15 to 20 shoots per foot, so again the canopy is shaded.

Solution to the dilemma

The solution to the above problem is to divide the canopy; that is to make two feet of canopy for each foot of vine row length. One can use any one of several trellis systems, for example, Scott Henry, Smart-Dyson (to be described in the next ***PWV*** Nov/Dec'93 column), 'U' or lyre trellis, Geneva Double Curtain (GDC), etc.

Whether vertically divided in the Scott Henry or Smart-Dyson, or horizontally divided with the 'U' or GDC, the result produces two feet of canopy for each foot of vine spacing.

This means that we can now apply Rule #1 and prune to the required 96 buds per vine which should give more balanced shoot growth. Dividing this figure by the doubled canopy length (now 16 ft.) gives six buds per foot, almost the desired value of five. One would install the new trellis and presume that as the shading is decreased, the pruning weight will be reduced and the crop will improve. It may be that the vine can be pruned to the desired value of five shoots per foot in future years.

Conclusion

The tricky part about the Golden Rules of Viticulture is to apply them simultaneously, like a pair of algebraic equations. Their application will quickly highlight problems of vines being out of balance, or shoots being so close together as to cause shading. Solutions to the problem are found by dividing canopies, but sometimes we also have to do vine removal. More of that in later columns.

Future columns will also deal with the question: Which trellis system should I use? and the related issues of the ease of construction and management of different systems. The next column will introduce a new training system know as the Smart-Dyson system. This trellis is a joint Australian-American collaboration, with some ideas from Portugal! ■

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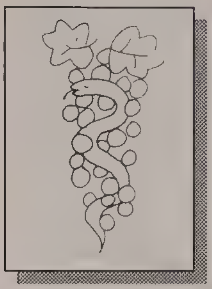


By C.J. Muller and K.C. Fugelsang
Enology Department,
California State University, Fresno

GENTISIC ACID: an aspirin-like constituent of wine

Since the French Paradox became public,[10] a flurry of reports has dealt with various aspects of the apparent protective effect of wine against cardiovascular damage.[12,15]

Many recent reports have centered around the phenolic constituents of wine and in particular resveratrol, which seems to act by interfering with prostaglandin formation (prostaglandins are compounds involved in inflamatory response by tissues). Specifically, by preventing the conversion of prostaglandin precursors into thromboxane as catalyzed by the enzyme clooxygenase, thus preventing the crucial hydroxylation (oxidation) step.[5,6,15] Thromboxane, is, in turn, the compound immediately responsible for the formation of blood clots.[3,6]

It appears then, that both inhibition of cyclooxygenase and general antioxidant activity are crucial in providing cardiovascular wellness. A similar action has been suggested for other phenolics, both simple and complex, present in wine. Thus, it has been suggested that compounds such as anthocyanidins, flavanols, flavanolols, flavanones and flavones, including the ubiquitous epicatechin and quercetin, might be implicated.[16]

Upon review of the phenolic constituents reported in wine, it appears that, in addition to those mentioned, a very likely candidate for the prevention of blood clots and anti-inflammatory response, might be gentisic acid [490-79-9] or 2,5-dihydroxybenzoic acid (Fig.I). This compound is ubiquitous in plants including grapes, and has been reported repeatedly in wine.[1,4,7,8,11,13,14] One such report indicates that it is found at levels of about 2.25 mg/L in white wine.[17] It also is present, at slightly higher concentration, in red wines. In addition, it has been shown that when a person takes aspirin, the body produces gentisic acid.[2]

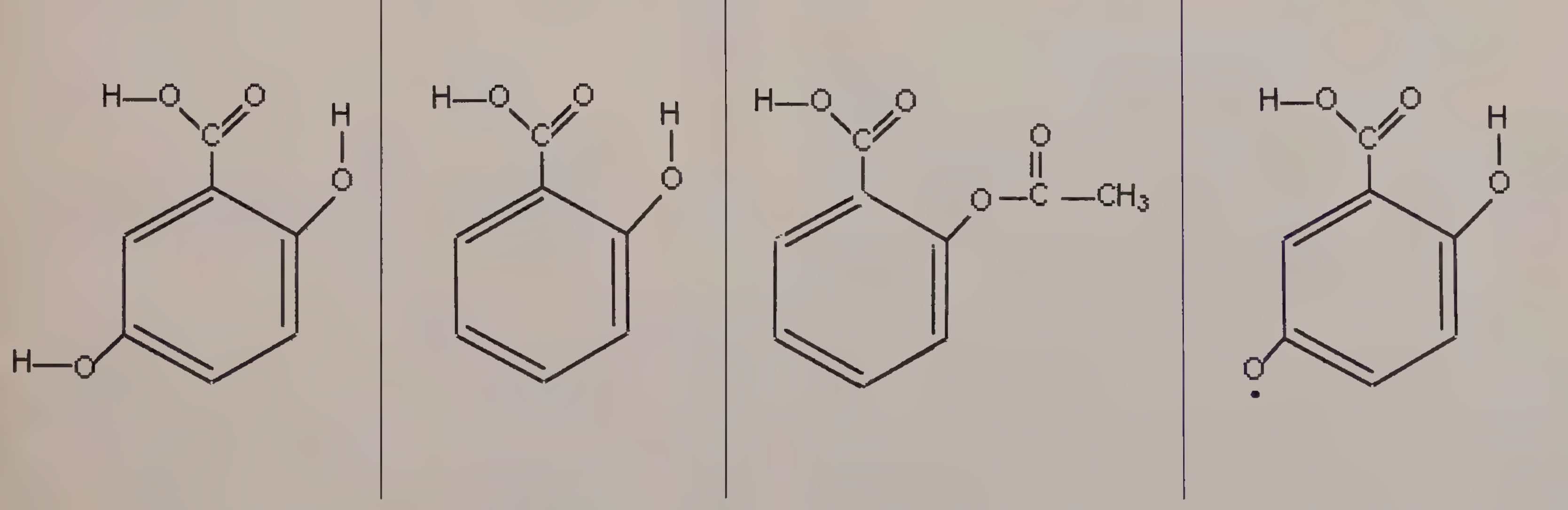
What is strikingly unusual about gentisic acid, is its structural similarity with the active principle of aspirin, salicylic acid or 2-hydroxybenzoic acid (Fig.II). Thus, it is expected that gentisic acid would exert a pharmacological action similar to aspirin's (Fig.III). This includes the repeatedly proven ability of aspirin to increase capillarity and thus blood flow, as well as the anti-inflammatory action which results from its ability to block cyclooxygenase activity. Indeed, gentisic acid has been postulated and prescribed at one time or another as a substitute for aspirin in medicines.[9]

Furthermore, gentisic acid is a better antioxidant than aspirin due to it's chemical structure (specifically, the fact that it has two phenolic hydroxyls in positions *para-* to each other). Antioxidant activity of this type of compounds has been amply demonstrated.[2,3,6,18]

Thus, gentisic acid seems to be better suited than aspirin to perform the cardiovascular protective duties for which aspirin is widely prescribed. Furthermore, due to its antioxidant activity and its ability to inactivate harmful compounds, such as hydroxyl free radicals,[2,3] gentisic acid might also help prevent, as has been suggested for aspirin, the development of some forms of cancer.[2]

What this means to those who choose to include wine in their daily diet, is wine has an impressive array of compounds that may contribute to health as well as the flavor of the meal. Consumption of one-half liter of wine/day, either white or red, might provide, in terms of gentisic acid alone, similar cardiovascular protective action as half of the commonly prescribed dose of 5-mg of aspirin every other day, with the added benefit of modest protection against certain forms of cancer. ■

Figures 1, 2, 3, 4



1– Gentisic acid **2 – Salicylic acid** **3 – Acetylsalicylic acid** **4 – Gentisic acid semiquinone**

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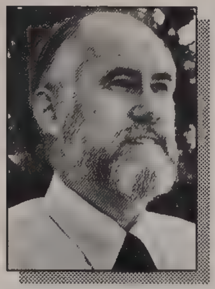

By D.R. Storm, PhD, P.E.

Winery rags and the recycled T-shirt connection

Clean, absorbent rags are a requisite part of the maintenance package in any industrial endeavor. Industrial laundries provide clean, monochromatic, monotonously uniform, one-foot square rags, which seem to be favored by auto repair facilities and heating/air conditioning contractors. But when it comes to winery cleaning chores, there is an alternative choice.

In this, the era of serious recycling of all resources (both plentiful and scarce), a winery's supply of clean rags should come from a post-consumer T-shirt sorter, laundry, and packager. For the past 12 years, our winery has periodically purchased a 50-pound box of these colored cotton rags.

Previously, the transaction had consisted only of an exchange of a check for the rags. Recently, however, I toured the facility and to my surprise the scope of used upper-body coverings goes beyond the level of industrial rags. Bales of still-wearable T-shirts in 1,000-lb. quantities were being readied for shipment to both Somalia and Pakistan through the largesse of the United Nations and the Red Cross, respectively.

Remarkably non-automated and highly labor-intensive, the operation begins with mandatory laundering. Hand-sorting separates white cotton from colored polyester blends and worn from still-wearable categories. Terrycloth shirts, classed as 'highly absorbent,' form yet another sub-category and are earmarked for industrial rags. The sorters do not need to read labels, they learn to detect cotton from polyester blends by 'feel' alone.

The only mechanized tasks are the T-shirt baler (similar to a cardboard baler used in supermarkets and some wineries), which compacts and binds the shirts, and forklifts to handle the heavy bales. There appears to be a large measure of job security in this business activity, as the multicolored mountains of stockpiled shirts show no signs of shrinking.

Monitoring pH

Why pH?

The ideal pH monitoring system would provide a continuous measurement and record at several key locations in the winery's sewerage system (raw waste, treatment reactor and final effluent). With well-calibrated instruments, it is the easiest of wastewater parameters to obtain — so what's the problem?

- Wide swings in pH over very short time period.
- pH meter electrodes are easily fouled in the wastestream, leading to erroneous readings.
- instruments require temperature compensation and frequent calibration.

Grab-samples may be sufficient, particularly if the measurements are correlated with an activity in the winery that is repeated annually. For large wineries with highly variable production rates and product lines, the grab-sample program would not be effective and continuous pH recorders would be required. A few years of the same pH in the raw wastewater for the same winery activity will eventually provide a reliable database upon which to implement base pH neutralization without resorting to repetitive field measurements.

For example, swelling new cooperage is an annual affair for many wineries, and while the resultant water discharged to the treatment system may appear benign, a low pH from the leached oak tannin may give a serious case of indigestion to the standing crop of organisms which make up the heart of the treatment process.

1) All winery pH control programs have recently acquired a third head; just as an antacid helps the human version of digestive malaise, so must an agent be applied to neutralize the pH of the wastestream to avoid disrupting the orderly biodegradation of the carbonaceous waste. 2) If a winery discharges to a municipal treatment system, pre-treatment of the wastestream including pH neutralization is now federally mandated. States and municipal sewerage agencies have adopted this requirement as part of the water pollution control regulations.

3) Stormwater monitoring permits can require pH measurements (see **PWV** Winery Water & Waste, July/August 1993 and Nov/Dec 1991). Ensuring treatability, if wastewater is treated on-site at the winery, is the most common requirement for controlling pH.

If settling aids are employed by the winery to achieve good sedimentation of suspended solids, flocculants (in particular polyelectrolytes) perform much more efficiently in a near-neutral pH environment.

Continuous pH monitoring

While grab-sample measurements of pH may be all that is required to satisfy the 3-headed data acquisition monster for most wineries, the discussion of this subject would not be complete without mentioning automated, continuous monitoring pH systems.

The basic elements of a pH meter are the measuring electrode, reference electrode, and temperature compensator, all often combined in a single probe. Continuous pH recorders constitute the ideal monitoring and control system.

The high pH situation can produce instrument readings that are actually lower than the true values. Antimony electrodes are also available as alternatives to glass; however, the material is vulnerable to corrosion. Except in very low strength, near neutral pH wastewater, antimony electrodes are probably not a good second choice for a winery installation.

If the winery staff person responsible for utility operations wants to remain in a supervisory control position at his/her desk, pH signals can be sent by a hard-wire network to a convenient location and hard copy recorder or to a central computer for storage. By use of a signal preamplifier and a coaxial cable, the pH measurement can be transmitted up to several thousand feet to a hard copy recorder.

Glass electrodes are vulnerable to caustic attack, which can probably only occur in a winery waste discharge when caustic tank cleaning compounds are employed. The dilution provided by fresh water rinse cycles usually prevents the pH from rising precipitously. (As this is an often repeated step for excess tartrate removal from fermentation tanks, a set of grab-sample pH readings should be acquired to establish a pH database similar to the cooperage swelling water sample previously described.)

Control and adjustment

For wineries where pH is generally below 6 and often in the 3 to 5 range, a base reagent must be added. Ammonium or potassium hydroxide are most often used, but if the wastestream is nitrogen-deficient, you get double duty from the ammonia.

Sodium hydroxide (recycled) is generally available at a significantly lower cost, but if the treated wastewater is earmarked for irrigation reuse, the sodium-ion does not work beneficially with vine or other plant irrigation.

With reliable measurements, two possible chemical neutralization options are possible. In practice, the pH measurement operates a forward-feed controller, which injects a pre-programmed quantity of base chemical downstream from the pH probe to achieve neutrality. A second arrangement of this system provides a finer-tuning of chemical addition by injecting the base material upstream of the pH probe and then measuring the resultant adjustment. An additional downstream pH probe then provides a signal back to the controller for increased or decreased chemical injection.

Obviously, combining the advantages of both schemes would give both an upstream (primary adjustment) and downstream (secondary correction) to create an extremely tight range of pH control.

Keeping it clean

The electrode must be immersed in the wastestream to obtain an accurate continuous pH measurement. Fouling of the electrode is unavoidable. Hand-cleaning can be a daily chore, although pH instrument accessories are available that, on a programmed cycle, clean the electrode with a high-pressure stream of water. Then a quantity of buffer solution is played upon the electrode and the instrument is checked for calibration to the standard solution. ■

David Storm is a Consulting Civil and Sanitary Engineer and owner of Winters Winery.

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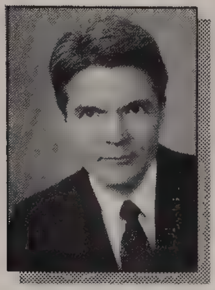


By R. Corbin Houchins

Marketing in a regulated industry

*(The following is Part II of a two-part column adapted from a seminar given for emerging regional producers, presented to the annual meeting of Southwest wineries, May 1993. Part I was in the July/August'93-***PWV***.)*

Distributing to retailers

There are three practical ways to get your wines on shelves of stores and on restaurant wine lists: Selling directly, selling through a broker or master distributor, and selling to a local distributor in the market you want to reach.

Direct sales:

Some states permit wineries located and licensed in the state to sell their wine directly to retail accounts. With few exceptions (the District of Columbia comes to mind), states require out-of-state wineries to sell through local distributors. However, most states allow friendly wholesalers to order specially for a specific retailer without too much subterfuge.

Four-tier systems:

You can employ a broker or marketing firm to do your field representation while selling direct or to wholesalers. Many states require brokers to be licensed or registered as agents of the supplier. The same requirements would apply to you or your employee if you went on the road to promote sales in those states.

Food brokers, in general, do not necessarily have experience in promoting wine, so if you want to go that route, be careful in selecting the person and spell out the assignment carefully in the contract.

There are 'master' distributors who cover the national market. Typically, they have one or more houses of their own in key markets and a network of business relationships with local distributors to whom they sub-distribute.

The advantages are access to the affiliated houses and to whatever in-house marketing expertise the master distributor may have, and usually the ability to shift the crdit risk to the master distributor. The disadvantages are that it is another layer of mark-up and a small winery, if it can get in at all, may find itself lost in the master distributor's book of brands.

Conventional three-tier distribution:

Most wine sold by retailers is acquired from wholesale distributors who are responsible for marketing the brand in their area of operation. We could spend many pages on issues that arise from use of distributors, but it will suffice here to point out the most important recurring issues and recommend that you obtain legal advice on them before you sell wine to a wholesaler in any market, whether the distributor is one you are already doing business with or not.

The first issue is the agreement or understanding between you as seller and the distributor as your customer. You will have an agreement, whether it is written or oral. If you do not use a written agreement drawn up for you, in 19 states special legislation obtained by the wholesaler lobby will write one for you, in whole or in part. I can assure you that you won't like it, though you may not become aware of it unless and until the relationship with your customer sours.

In the other states, if you do not use your own written contract, the agreement will be written in effect by the Uniform Commercial Code, which is not unfair to suppliers, but which invites litigation over how much notice is required in order to stop selling to your wholesaler customer.

Wherever you do business, reliance on oral understandings increases the long-term cost of selling through distributors, since when a dispute arises, no term of the agreement can be established without oral testimony, which will usually be contradicted by another witness.

Court proceedings are a time-consuming and expensive way to resolve disputes. It is much better to invest the time and trouble going into the relationship necessary to obtain a written contract, and in some cases, it is better to walk away from a deal that the distributor is not willing to commit to in writing.

Appointing wholesalers contains another trap for the unwary. A number of states require you to register your brand and to register yourself as the primary source of supply. Frequently, the state forms require that you identify the distributors appointed to carry your wine. Get your distribution contract signed before you file the form. and note on the form that the appointment is subject to the terms of the agreement.

If a distributor will not sign a formal agreement, there are still ways available to a supplier to create a written record of the terms on which business is conducted. However, we have had good success of late with formal agreements for small wineries; I think it is because the wholesaler must really want you in order to take the brand on at all.

Personal relationships are important in keeping the share of mind of a distributor, which translates into share of market. Distributors want you to be a reliable source of supply, to be available for dog and pony shows, and to show appreciation for their achievements.

You should be prepared to do all those things to an extent consistent with the value of the market, but you also need to know how to read the market to see if the distributor is doing a good job, and how to communicate your observations to the distributor. That process will be helped enormously by having the sales objectives stated in your distribution agreement.

Distributing to consumers

Within your state, you can sell at the tasting room and, to the extent permitted by the particular state, ship the wine directly to customers within the state. In Part I, I mentioned 'reciprocal shipment' and other ways of getting the wine directly to out-of-state consumers.

Since the laws vary a good deal, there is a list of states at the end of this column with a short informal summary of how one may ship there, if at all. Please note that the list is not legal advice and should not be relied upon for business decisions. It was compiled for the convenience of industry members, based on information available at the end of 1991, updated for reciprocal shipment in June 1993.

A number of caveats apply, including but not limited to the following: Reciprocal states may have other means of shipment from non-reciprocal states that do not appear on the list. Also, many states allow importation from abroad as an accommodation to travelers. Stated reciprocal volume limitations are based on nine-liter cases. Legal questions may arise as to whether a state grants privileges sufficiently similar to those granted by another state to be recognized as reciprocal.

Compliance with state importation laws should be verified by the shipping winery's legal advisor at the time of shipment. Violation may result in revocation of the winery's right to ship to distributors or de-listing of the brand from state stores.

Antitrust compliance

Antitrust is not something that concerns only large corporations. Most of the violations that result in litigation involve small- and medium- size firms. Wineries are in the packaged goods business and have to be aware of the corn flakes rules, not just wine regulations.

To illustrate a couple of issues that fall under the general heading of antitrust:

Pricing presents the most risks for a small winery. Most of us know that it is illegal to agree on prices with a competitor. Possibly fewer people are aware that agreements with your distributor on the resale price are also considered illegal price fixing.

The technicalities of resale price maintenance efforts are beyond the scope of this column. If you have a marketing plan that includes positioning your product at a specific price point on the retail shelf, discuss resale price issues with your legal adviser.

Another federal trade regulation law that sometimes takes people by surprise is the prohibition on price discrimination. You don't have to have a uniform price to all buyers everywhere, but sales in interstate commerce at different prices to similarly situated buyers who compete with one another raise antitrust issues that have to be carefully considered.

If injury to competition between the buyers or between customers of the buyers occurs, and none of the somewhat technical defenses is applicable, the seller can be liable for harm to the disfavored buyer. Some states have laws with similar provisions for intrastate sales of all goods, and some state liquor laws require uniform wine prices to all trade buyers.

Antitrust is a broad-ranging topic. We have not touched upon issues related to territorial allocations, exclusive dealing agreements, and the host of other aspects of competition that are regulated for all commerce. Apart from the risk of enforcement by public agencies, antitrust noncompliance makes maintaining a distributor network much more expensive.

When it comes time to change or discontinue distribution in a market, the former distributor will throw at you any antitrust misconduct he or she can find in the past relationship, often seeking treble damages for the termination itself as an alleged result of the violations.

I urge anyone in the packaged goods business to set up a compliance program with the help of your legal adviser, even if you are small operation and the program takes only 1½ pages in your office procedures notebook. ■

WINE SHIPMENTS TO CONSUMERS

(Reciprocal states have √)

DESTINATION — Shipping Method

ALABAMA — Consigned to customer who has paid for the wine, in care of state liquor store, freight prepaid.

ALASKA — Directly to individual who is not in the liquor business, in reasonable quantities.

ARIZONA — Carried by consumer directly from outside the U.S., not exceeding one liter.

ARKANSAS — None

√ **CALIFORNIA** — From reciprocal state, by common carrier directly to consumer, up to two cases per month.

√ **COLORADO*** — From reciprocal state, directly to consumer for orders placed in person by the recipient at the winery, up to two cases per month.

CONNECTICUT — Directly to consumer holding importation certificate from Liquor Control Commission, for wine purchased at the winery, not to exceed five gallons in any 60-day period.

DELAWARE — Duty-free wine may be transported into the state, not to exceed one liter per day (4 liters if entering from American Samoa, Guam, or American Virgin Islands).

D.C. — Directly to consumer by public or common carrier, not to exceed one quart per month, or transported by consumer, not to exceed one gallon per importation.

FLORIDA — Carried by consumer after purchase out of state, not to exceed one gallon per importation.

GEORGIA — Carried by consumer after purchase out of state, not to exceed 0.5 gallon per importation.

HAWAII — Direct shipment to consumer holding importation permit from Honolulu Liquor Commission, not to exceed one 5-gallon shipment per year (3.2 gallons if unsolicited gift). Carried by consumer, not to exceed one gallon per importation.

√ **IDAHO** — From reciprocal state, directly to consumer, not to exceed two cases per month.

√ **ILLINOIS** — From reciprocal state, directly to consumer, not to exceed two cases per month.

INDIANA — Carried by consumer, not to exceed one quart per importation.

IOWA — Carried by consumer, not to exceed one liter per importation (4 liters if obtained abroad).

KANSAS — None

KENTUCKY — Directly to consumer from outside the U.S. through U.S. Customs, with payment of excise tax.

LOUISIANA — None

√ **MAINE** — Directly to unlicensed recipient. No permit required if shipper unlicensed, product not normally distributed in state, shipping state reciprocal, and shipment by common carrier. Permit for other direct shipments, $10 per importation. Up to one gallon carried by consumer.

MARYLAND — Up to one quart carried by consumer, not to exceed two quarts per month (one gallon per importation from abroad).

MASSACHUSETTS — Gifts directly to consumer holding importation permit from Alcoholic Beverage Commission

MICHIGAN — Under 21% alcohol directly to consumer, not to exceed 9 quarts per importation.

√ **MINNESOTA** — From winery in reciprocal state, directly to consumer, not to exceed two cases/year. Carried by consumer, not to exceed one quart (one gallon if from abroad).

MISSISSIPPI — None

√ **MISSOURI*** — From reciprocal state, directly to consumer, not to exceed two cases per year.

MONTANA — Carried by consumer, not to exceed three gallons per importation.

NEBRASKA — None

NEVADA — Directly to consumer, not to exceed one gallon per month.

NEW HAMPSHIRE — Carried by consumer, up to three quarts (three gallons with permit from State Liquor Commission) per importation.

NEW JERSEY — Directly to consumer holding special permit from Division of Alcoholic Beverage Control

√ **NEW MEXICO** — From reciprocal state, directly to consumer, not to exceed two cases per month.

NORTH CAROLINA — Carried by consumer, not to exceed 20 liters (4 liters if fortified) per importation.

NORTH DAKOTA — None

OHIO — Directly to consumer who has obtained consent from Department of Liquor Control, up to two cases per importation, not to exceed 15 gallons in any three-month period.

√ **OREGON** — From reciprocal state, directly to consumer from winery holding Out of State Wine Shipper License, not to exceed two cases per month.

PENNSYLVANIA — To consumer in care of Liquor Control Board after issuance of Consent Certificate.

RHODE ISLAND — Directly to consumer, not to exceed three gallons per importation (no volume limit on order by consumer through Liquor Control Administration).

SOUTH CAROLINA — Carried by consumer, not to exceed one gallon per importation. For products not distributed in the state, to wholesaler for resale directly to ordering consumer.

SOUTH DAKOTA — Carried by consumer, not to exceed one gallon per importation.

TENNESSEE — None

TEXAS — Carried by consumer, not to exceed three gallons per 30-day period, subject to payment of tax.

UTAH — Carried by consumer from abroad, not to exceed one quart.

VERMONT — Directly to consumer holding permit from Department of Liquor Control. Carried by consumer, not to exceed six gallons of table wine or two gallons of fortified wine per importation.

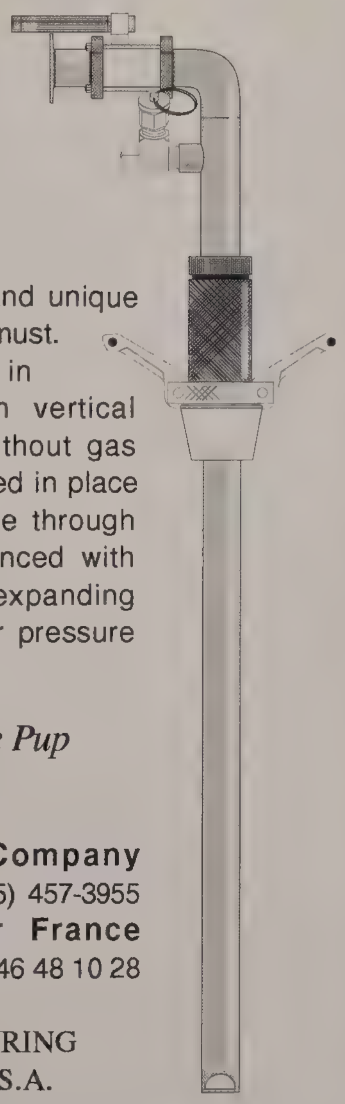
√ **WASHINGTON*** — From reciprocal state, for wine of shipper's own production, with license from State Liquor Control Board, directly to consumer, not to exceed two cases per year (no quantity limit on orders through Board).

√ **WEST VIRGINIA** — Beginning July 8, 1993, from reciprocal state, directly to consumer, not to exceed two cases per month. Carried by consumer, not to exceed 10 gallons per importation (no quantity limit on orders through Alcoholic Beverage Control Commission).

√ **WISCONSIN** — Directly to consumer, not to exceed one case per year.

WYOMING — Directly to, or carried by, consumer, not to exceed 3 liters per importation.

* *Advertising availability of direct shipment prohibited.*



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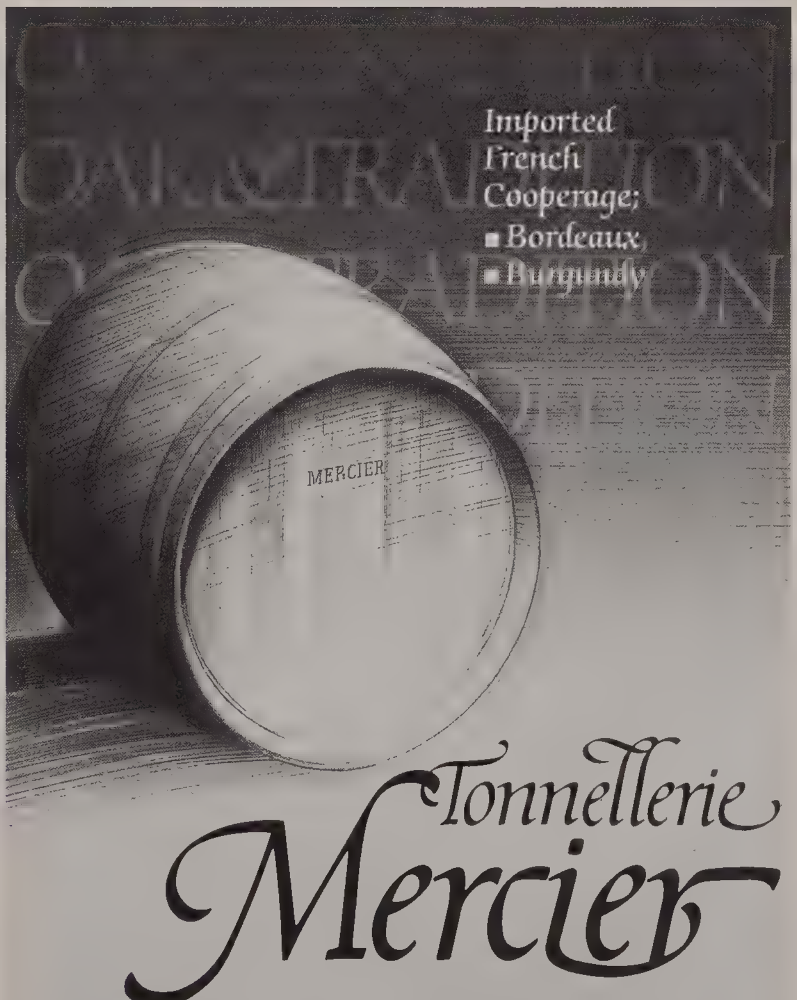

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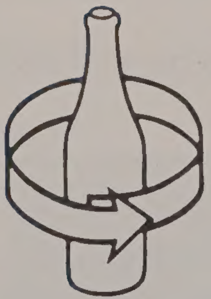

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Humanity in marketing

Everybody knows that people like to buy from friends. Guerrillas also know that you must make the human bond before you can make a lasting business bond.

Avoid depersonalization, that unpleasant side-effect of the computer age that's endemic within the business community, and add more humanity to your marketing process and more profits by using these guerrilla marketing weapons.

Begin by using the weapons of a warm smile, clear eye contact, and whenever possible (think of ways to make it possible) the person's name. These weapons feel human and comfortable and make the customer feel good. Good feelings can lead to high profits.

Naturally, this should also be your modus operandi during trade shows, whether you're an exhibitor or browser. Holding parties for key customers and prospects during trade show evenings has been a wise investment for the companies that want to intensify their human bonds.

The personality of your winery, as communicated over the telephone, can turn your customers and prospects on — or turn them off. If you absolutely must put the callers on hold, let them hear good music and interesting news about your winery, particularly special offers or new offerings.

All contact time with the customer should be oriented to the customer's needs and devoted to saving time and making money for the customer. Still, there is ample opportunity to strengthen the human bond by making the purchasing process as simple as possible. Be easy to do business with.

Offer flexible payment plans. Offer overnight delivery. Encourage telephone ordering. Do the sales training necessary — usually every week if you're taking marketing seriously — to be sure your sales reps are clear, pleasant, and a reflection of your winery's identity.

Your prospects have to buy you before they buy what you're selling. They'll have to buy your representatives before they'll buy what they're selling. Humanity, sincerely added to a cold business situation, warms up the transaction, and it motivates the customer to become a repeat customer. You've created a friendly mouth from which word-of-mouth can emanate.

Ask questions, listening closely to the answers. Provide maximum service to the customer and supply free data in the form of brochures, newsletters, videotapes, and samples. Let loose the full gamut of guerrilla marketing weapons.

Make warmth and humanity part of your written marketing plan, too. Include a statement of your identity, not some false image, but an honest identity. Your employees should read the marketing plan — easy to do with a seven-sentence guerrilla marketing plan — so that they can carry forth your banner of human recognition.

This attitude costs nary a cent, yet is a weapon of marketing. The enthusiasm displayed by your employees can be another free and potent weapon. Speaking of employees, your humanity should extend to employees throughout the winery in addition to your customer list. Just remember that human relations are simply public relations at their highest form. ■

(Jay Conrad Levinson is the author of the international best-seller, "Guerrilla Marketing," and "The Guerrilla Marketing Newsletter." To order or request a free brochure, call toll-free 1-800/748-6444. In California, call 415/381-8361.)

PWV invites your participation in our "Letters to the Editor" column. It's an excellent opportunity to express your opinion or suggestions.
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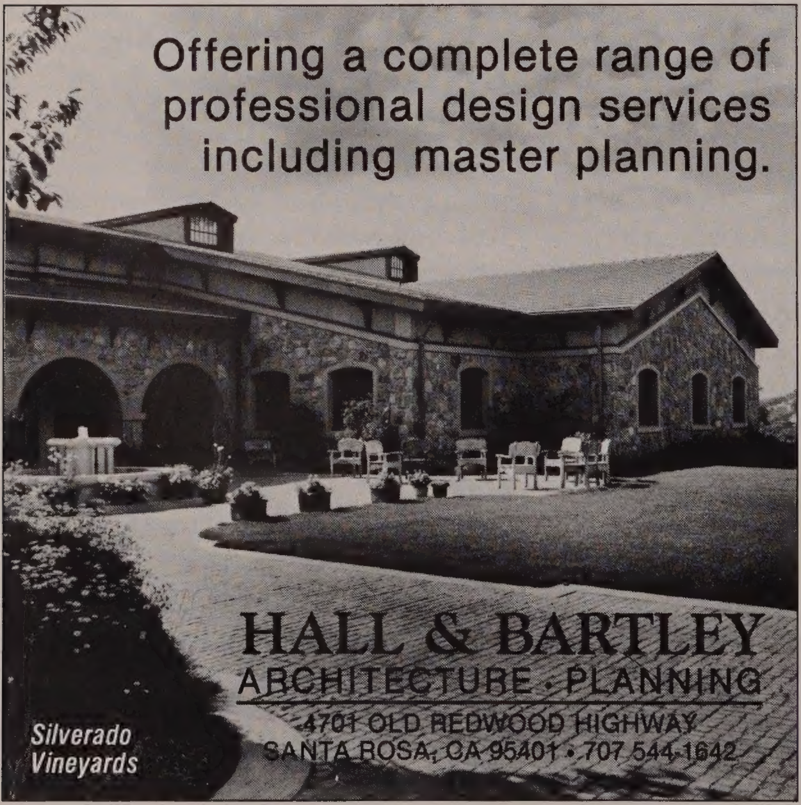
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NEW BOOK REVIEW

Vineyard Management Practices: An Environmental Approach to Development and Maintenance

This manual is divided into six sections: vineyard development, land preparation, erosion control, irrigation installation, vineyard maintenance, and wildlife habitat. Each section has a descriptive introduction, and is divided into numbered component parts. There are numerous drawings, diagrams, and technical outlines illustrating necessary materials and recommended methods for various management practices. An appendix includes a useful bibliography, a glossary and a list of self-help sources.

Much of the text deals with conservationist practices in hillside vineyards, which are the most vulnerable to erosion. The emphasis throughout the manual is on anticipating and preventing negative environmental effects when establishing or replanting a vineyard. For example, the advantages of vegetation, in the form of a cover crop or windbreak, is stressed in several sections; they provide wildlife and insect habitats, prevent soil erosion, and improve soil water penetration.

This manual was prepared by the Southern Sonoma Resource Conservation District, in conjunction with the Soil Conservation Service (U.S. Dept. of Agriculture). The technical advisory committee includes representatives from several regulatory agencies including Fish & Game, the Regional Water Quality Control Board, Cooperative Extension specialists, and Sonoma County vineyardists.

The intention of the committee was to provide a technical manual outlining basic standards and guidelines for "good vineyard management practices." This effort will hopefully help negate the need for complicated ordinances and costly regulation, as growers replant acreage infested with phylloxera over the next decade.

A good deal of serious thought and cooperative effort went into the preparation of this manual. The challenge of the 1990's for agriculture is to learn how to farm as stewards (protectors) of the land. "Vineyard Management Practices" will help vineyardists to meet the challenge.

The 300-page book is available from the ***PWV***-Bookshelf for $29.95 (plus 7.25% sales tax in California) plus shipping.

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